Building the MonClim.inp File for the AGNPS Complete_Climate Program

Description

An interim program named **Complete_Climate** was written to generate the missing climate elements and format the climatic data for input to AnnAGNPS. Input to **Complete_Climate** includes the GEM output file generated previously and a file created by the user containing monthly average sky cover, dew point temperature, and wind speed. These three remaining climate elements are generated for each day based on the monthly averages. These averages are available from the *Climatic Data Atlas of the United States* published by the U.S. Department of Commerce in 1968 or from a climatic summary for the desired location. The output file of **Complete_Climate** then contains all six climatic elements (three generated by GEM and three generated by **Complete_Climate**).

Currently, the input and output files have fixed file names. The GEM output file name must be GEM_output.inp. The file with the monthly information is named MonClim.inp (an example of file contents and format follows). The output file of **Complete_Climate** is named DayClim.inp (the default climate file name for input to AnnAGNPS). With respect to English and SI (Metric) units, both of the input files to **Complete_Climate** must be in the same units (if not, then an error message is placed in the error file).

Example Usage

In this example, monthly averages for Memphis, TN were obtained from the *Climatic Data Atlas of the United States* published by the U.S. Department of Commerce in 1968 with the pertinent figures scanned and placed below. The format of the file is displayed in the following table. It can be created through use of a text editor (no input program is available at this time).

The example file is in the directory
AGNPS\DataPrep\Weather\Climate\Datasets and named **MonClim.inp**.

The first record must have the word Climate in columns 1-10. The 1 in columns 41-50 signifies SI (Metric) units. A zero indicates monthly averages will be in English units. English units are degrees Fahrenheit for dew point temperature and miles per hour for wind speed. The SI unit for dew point temperature is degrees Celsius and wind speed is meters per second. Units for sky cover are percent (used with both SI and English).

The second record is a title record with any description of location, units, etc.

The third through fourteenth records are monthly averages for dew point temperature, sky cover, and wind speed respectively. The third record is for January and the fourteenth is for December. They are entered in ten column fields (11 - 20, 21 - 30, and 31 - 40). Optional information may be placed in columns 1-10 such as month abbreviation. Columns 1-10 are not read by the program so month can be entered for user reference.

Double click on the file name to display it. Next, the climate data for AnnAGNPS will be completed.

Table 1. The Monclim.dat data file produced for Memphis, Tennessee in metric units.

```
Climate                                                 1
Memphis, monthly dew point(deg C), sky cover(%), wind speed(M/sec)
January          0.0       70.      4.92
February         1.0       63.      4.92
March            2.2       62.      5.36
April            8.8       60.      4.92
May             14.3       60.      4.02
June            18.9       54.      3.58
July            20.5       54.      3.58
August          19.4       49.      3.13
September       16.0       44.      2.24
October         10.0       43.      3.58
November         3.9       53.      4.47
December         0.0       63.      4.47
```

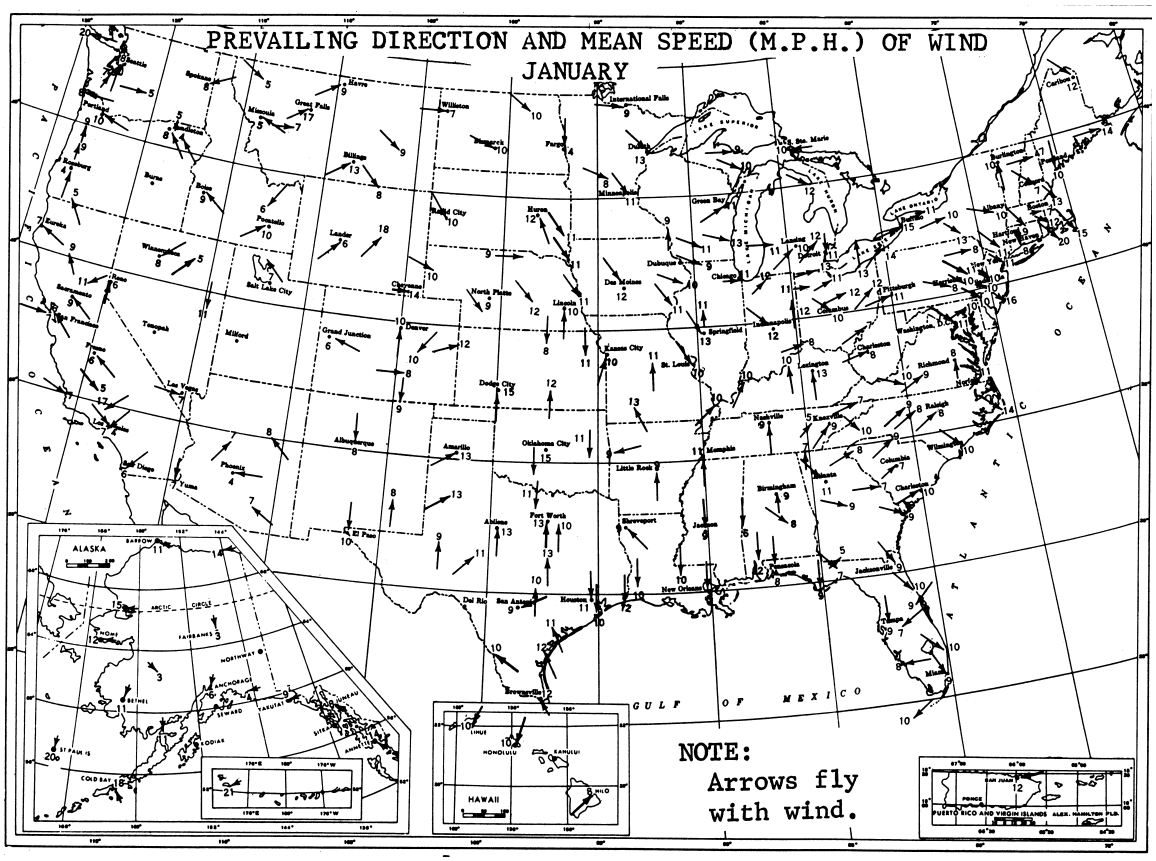

Figure 1. Values needed for the mean wind speed of the United States for January used in Complete_Climate.

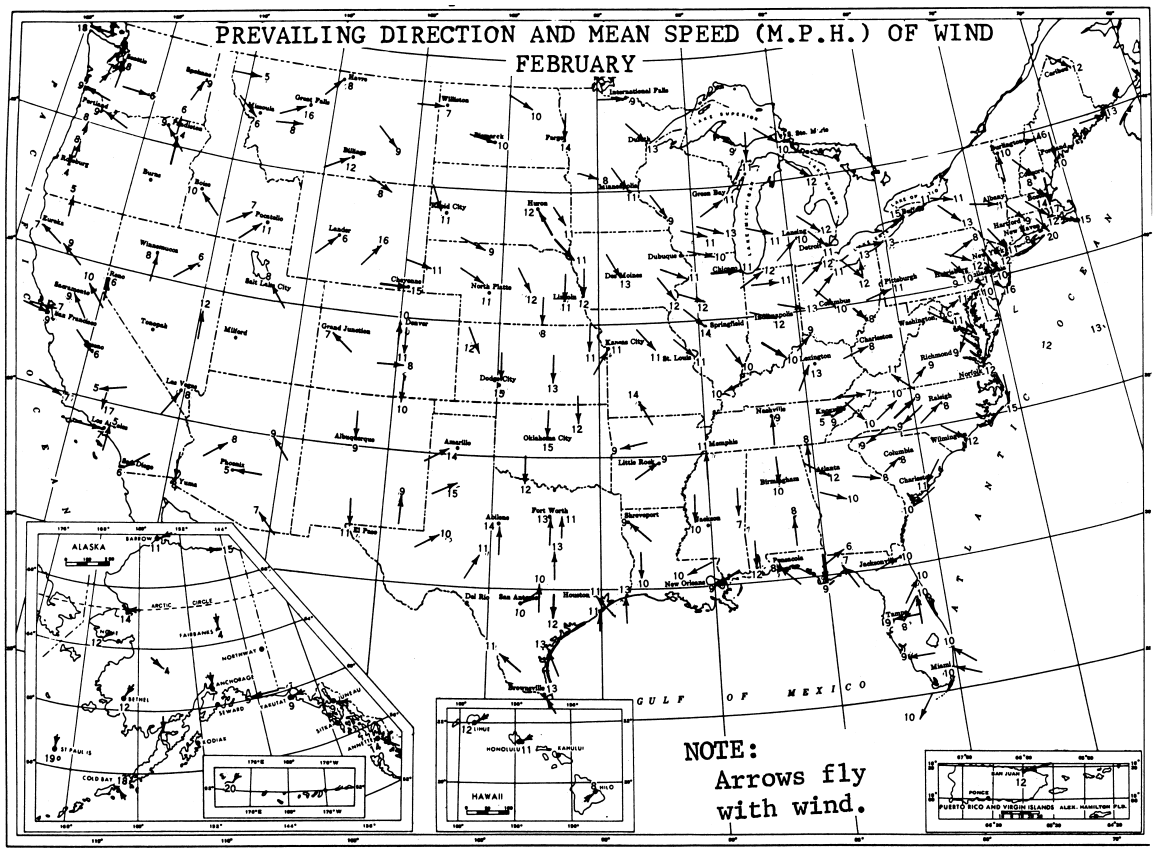

Figure 2. Values needed for the mean wind speed of the United States for February used in Complete_Climate.

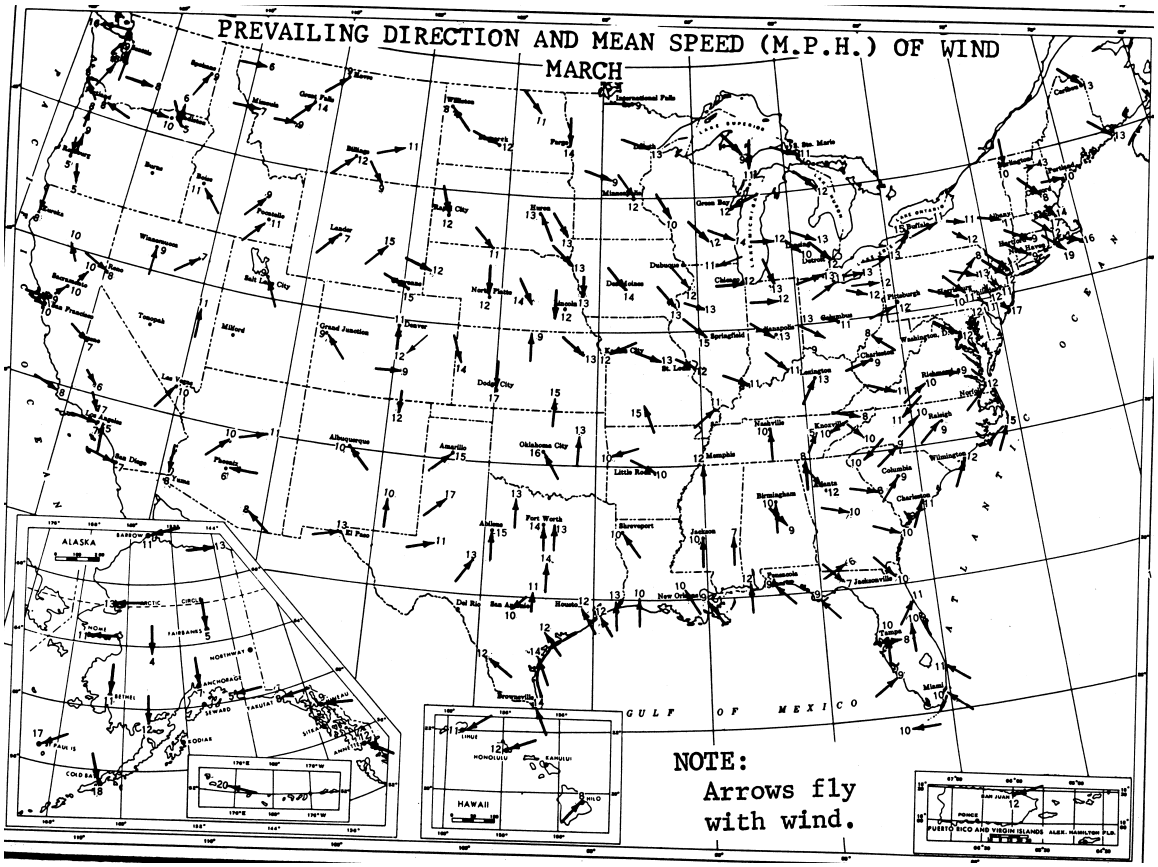

Figure 3. Values needed for the mean wind speed of the United States for March used in Complete_Climate.

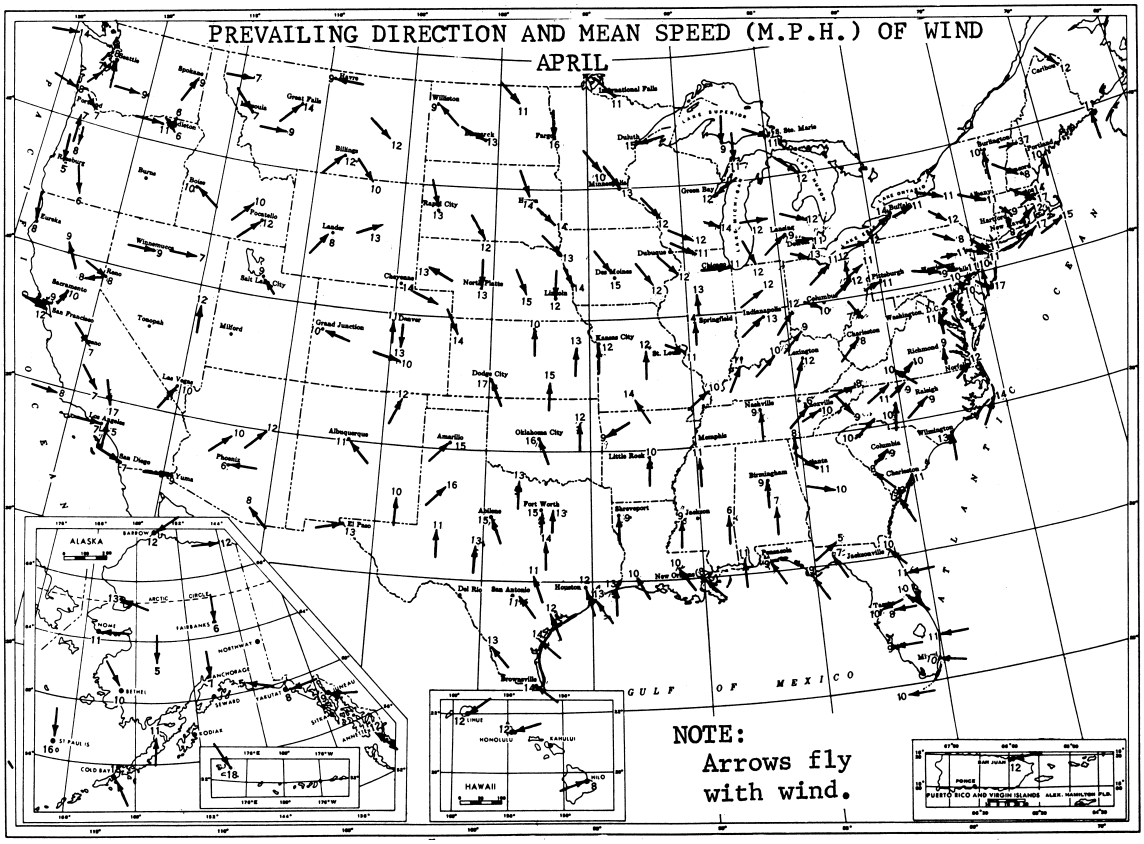

Figure 4. Values needed for the mean wind speed of the United States for April used in Complete_Climate.

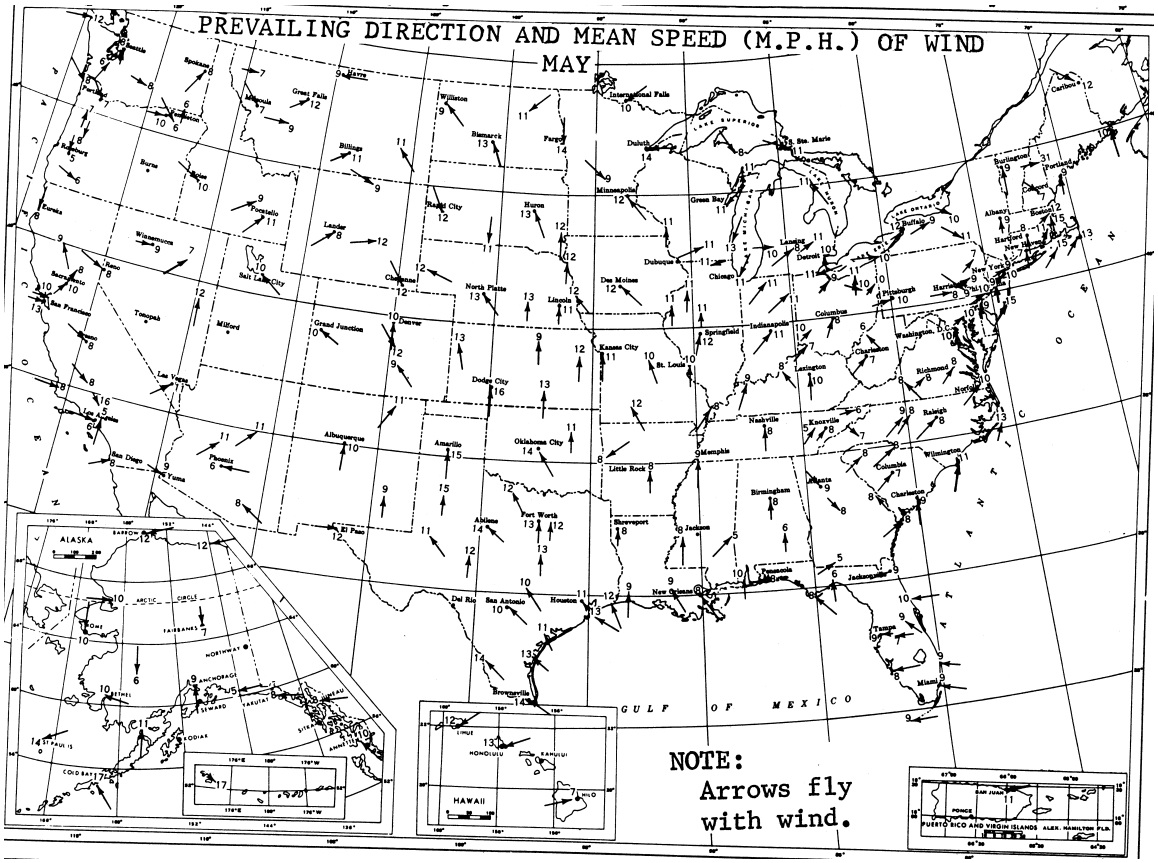

Figure 5. Values needed for the mean wind speed of the United States for May used in Complete_Climate.

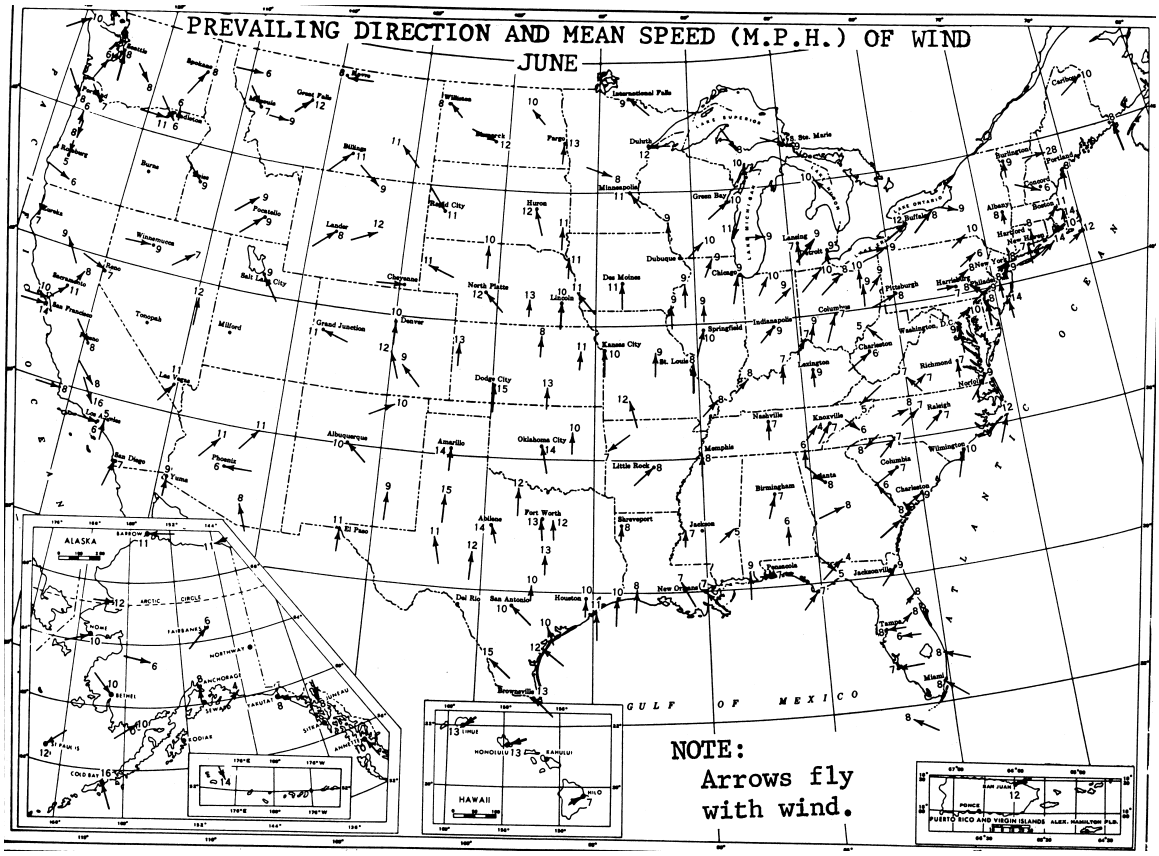

Figure 6. Values needed for the mean wind speed of the United States for June used in Complete_Climate.

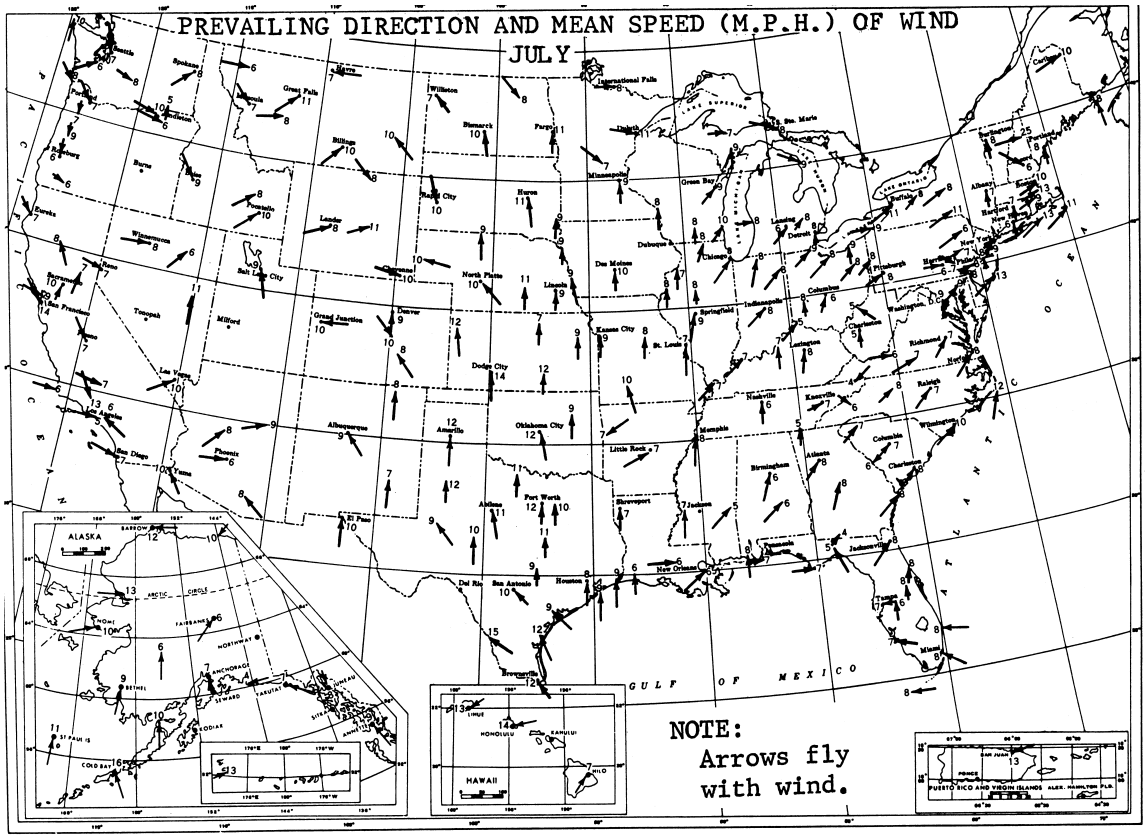

Figure 7. Values needed for the mean wind speed of the United States for July used in Complete_Climate.

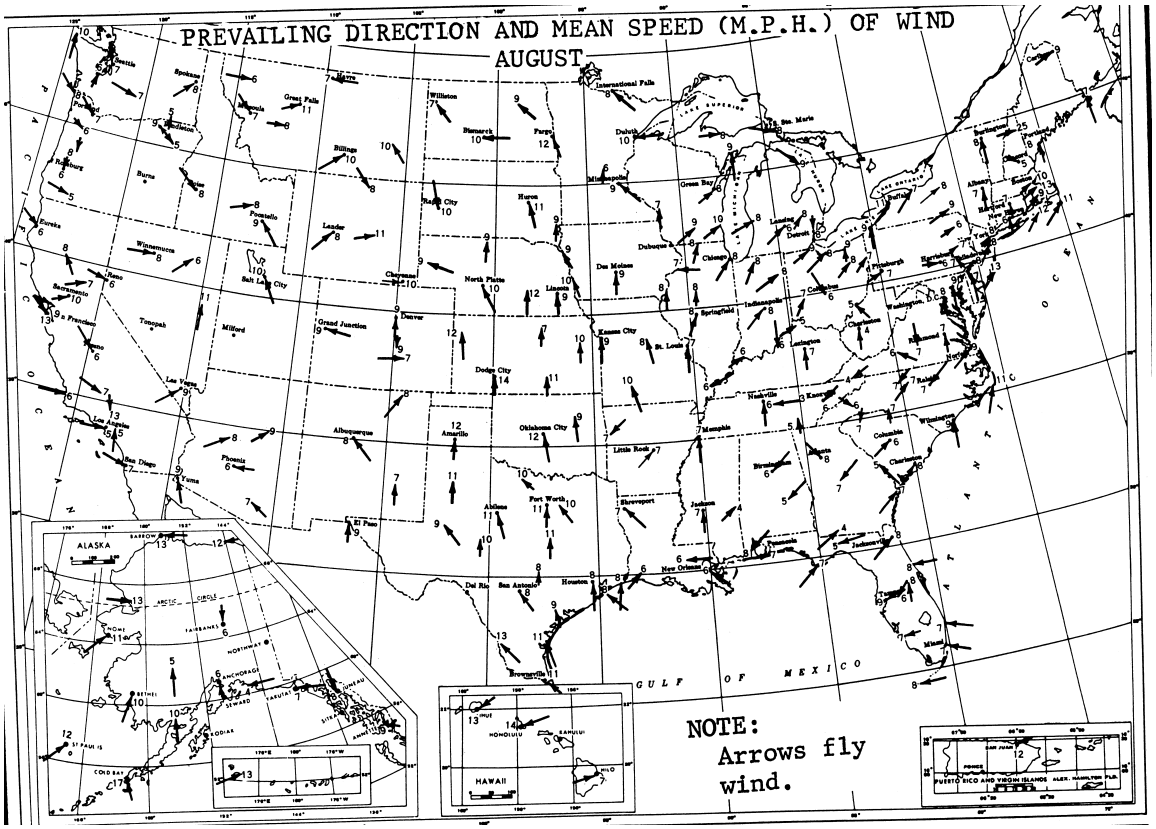

Figure 8. Values needed for the mean wind speed of the United States for August used in Complete_Climate.

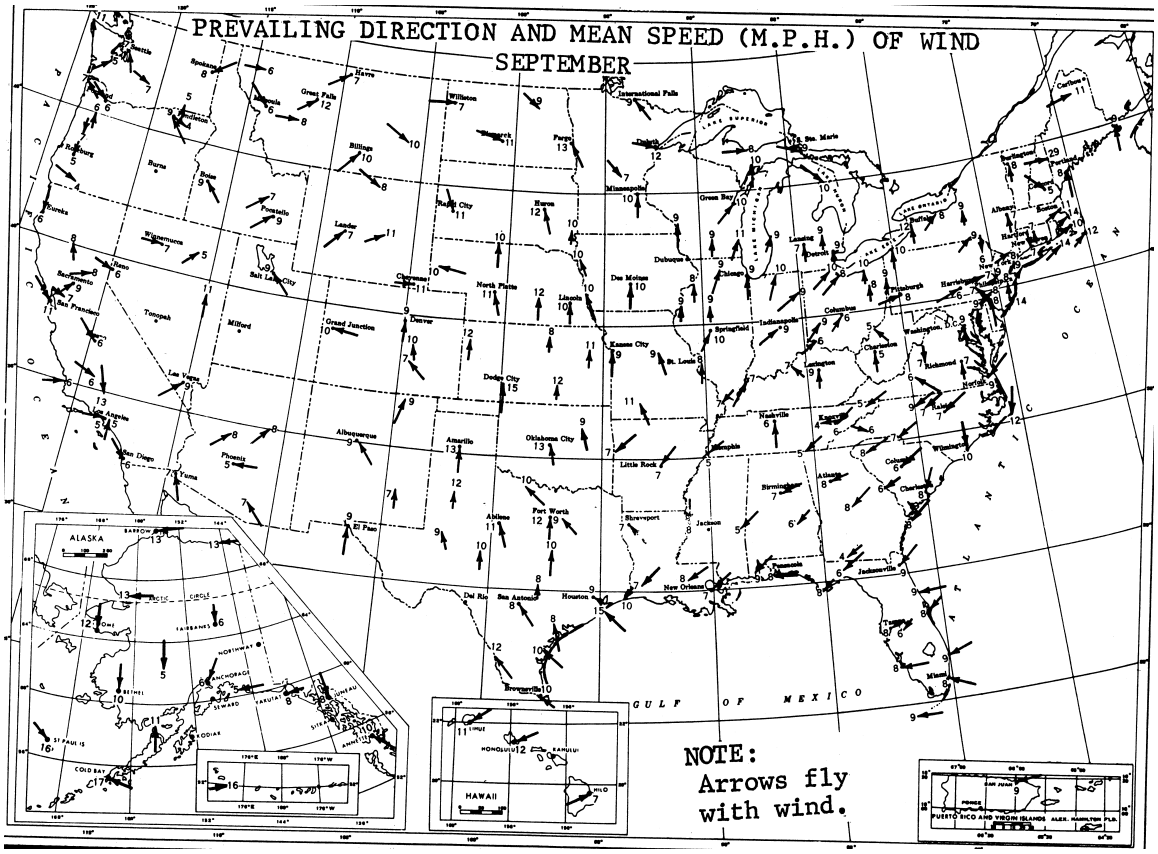

Figure 9. Values needed for the mean wind speed of the United States for September used in Complete_Climate.

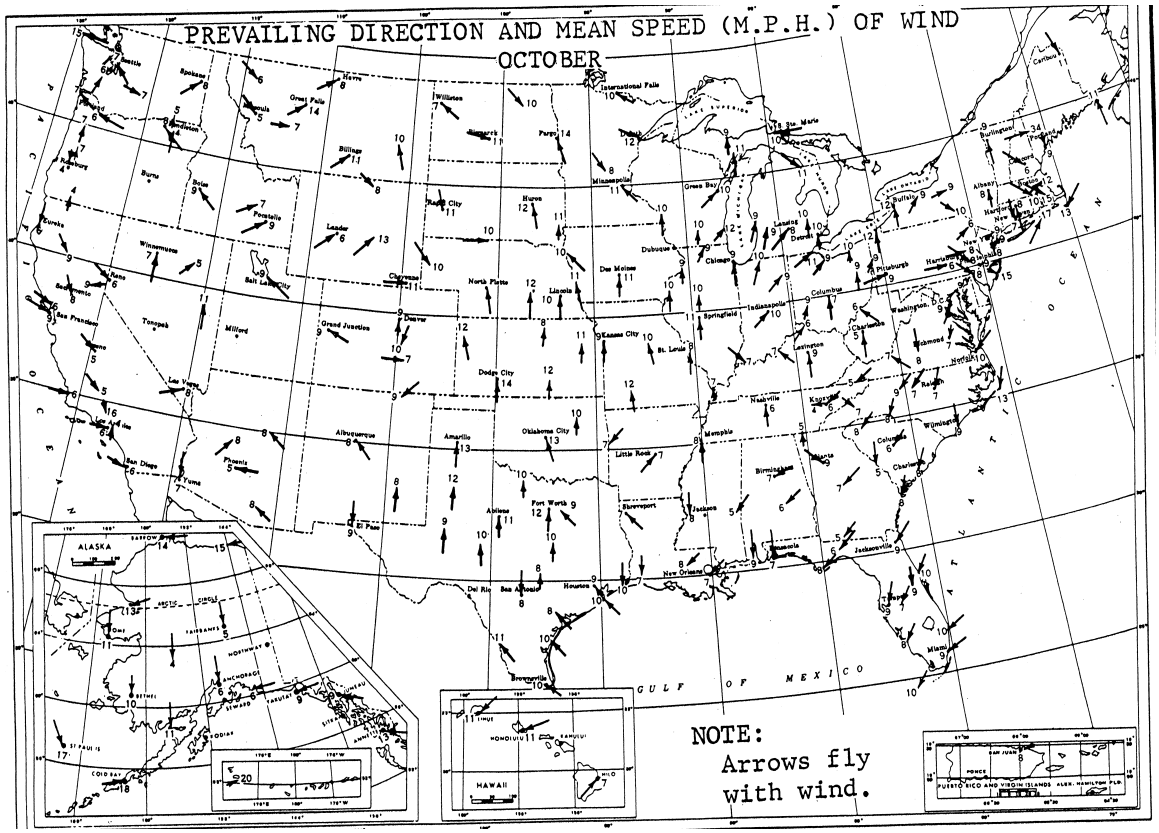

Figure 10. Values needed for the mean wind speed of the United States for October used in Complete_Climate.

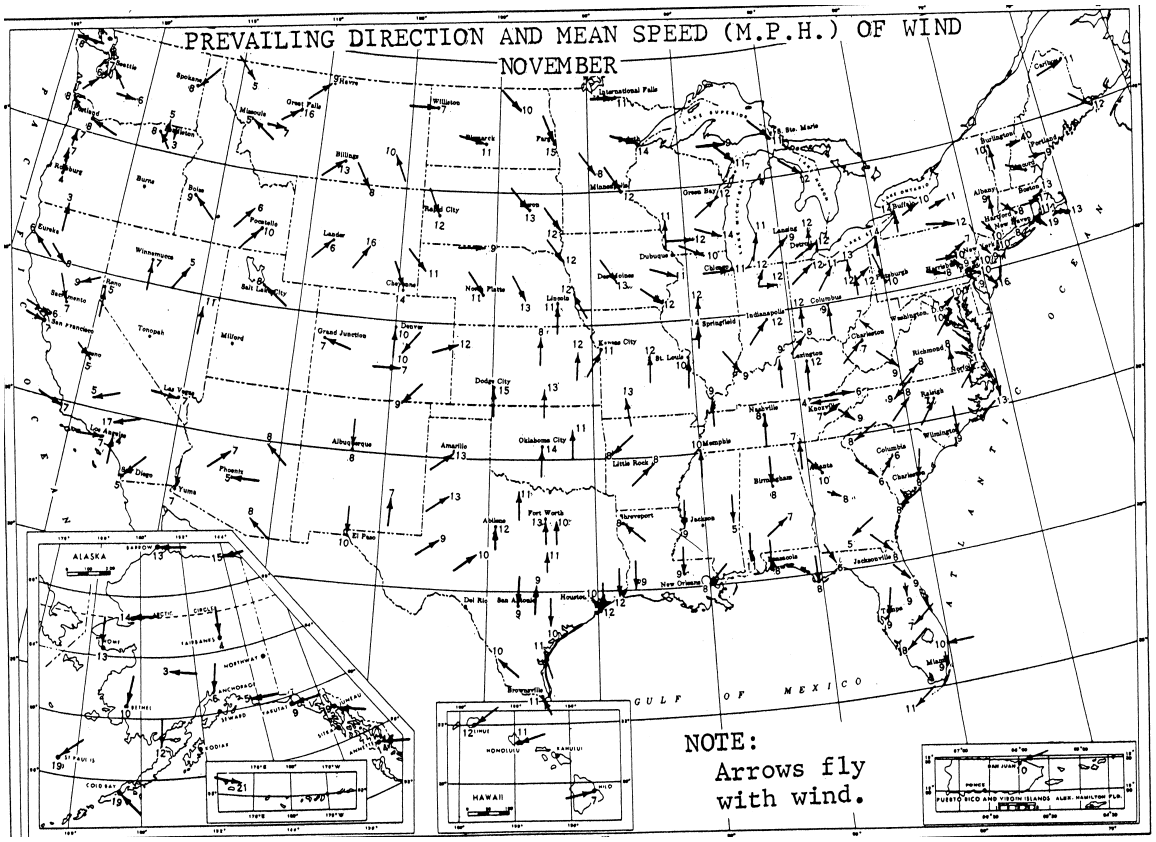

Figure 11. Values needed for the mean wind speed of the United States for November used in Complete_Climate.

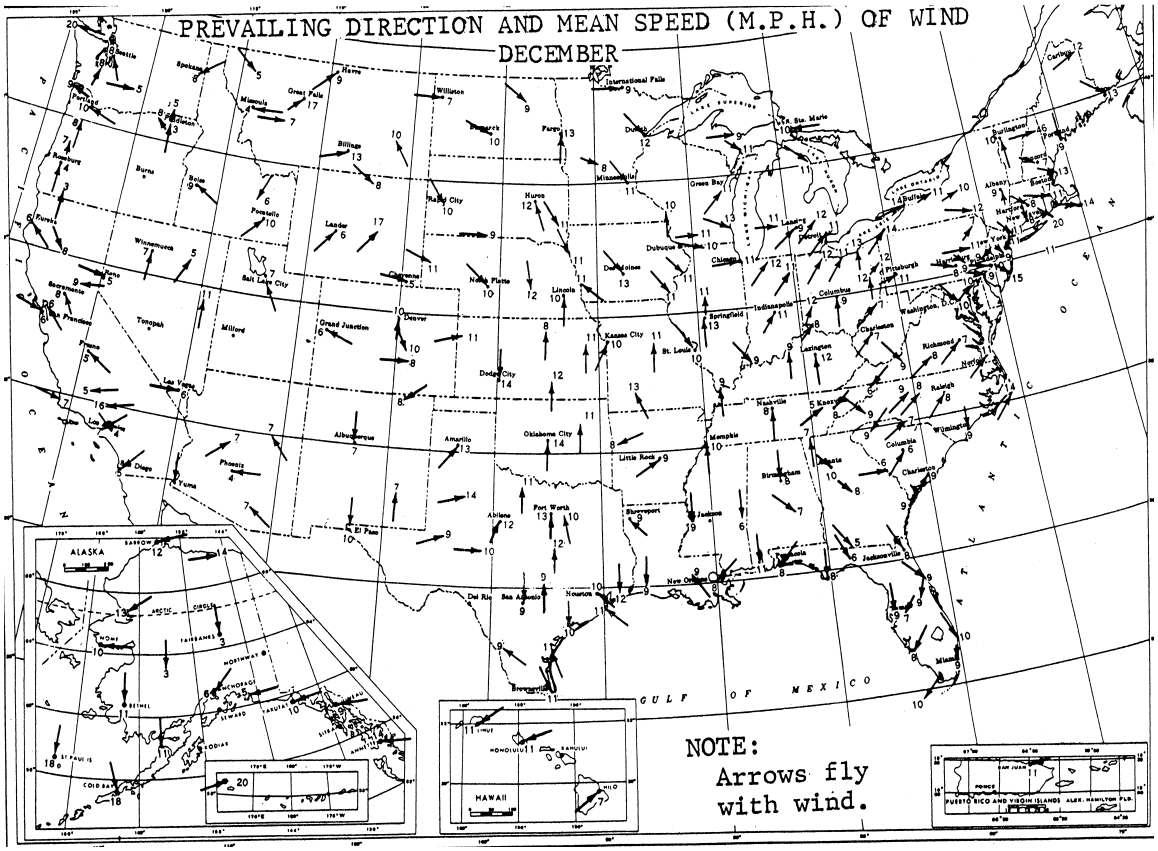

Figure 12. Values needed for the mean wind speed of the United States for December used in Complete_Climate.

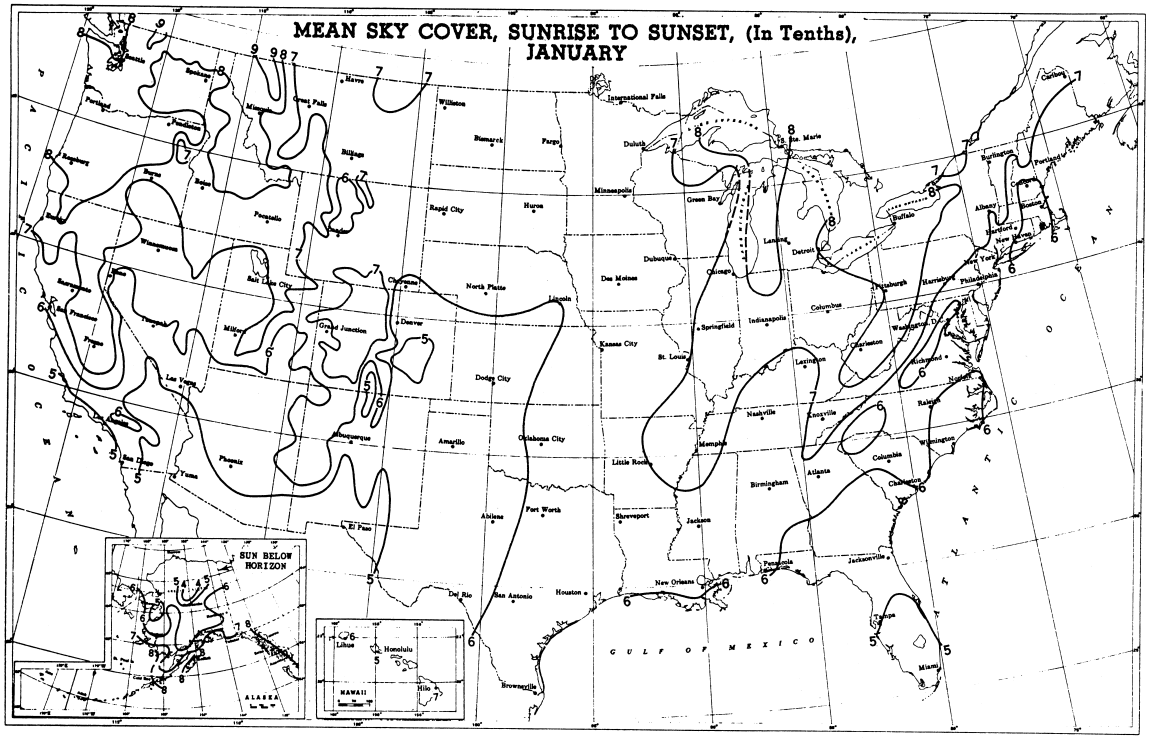

Figure 13. Values needed for the mean sky cover of the United States for January used in Complete_Climate.

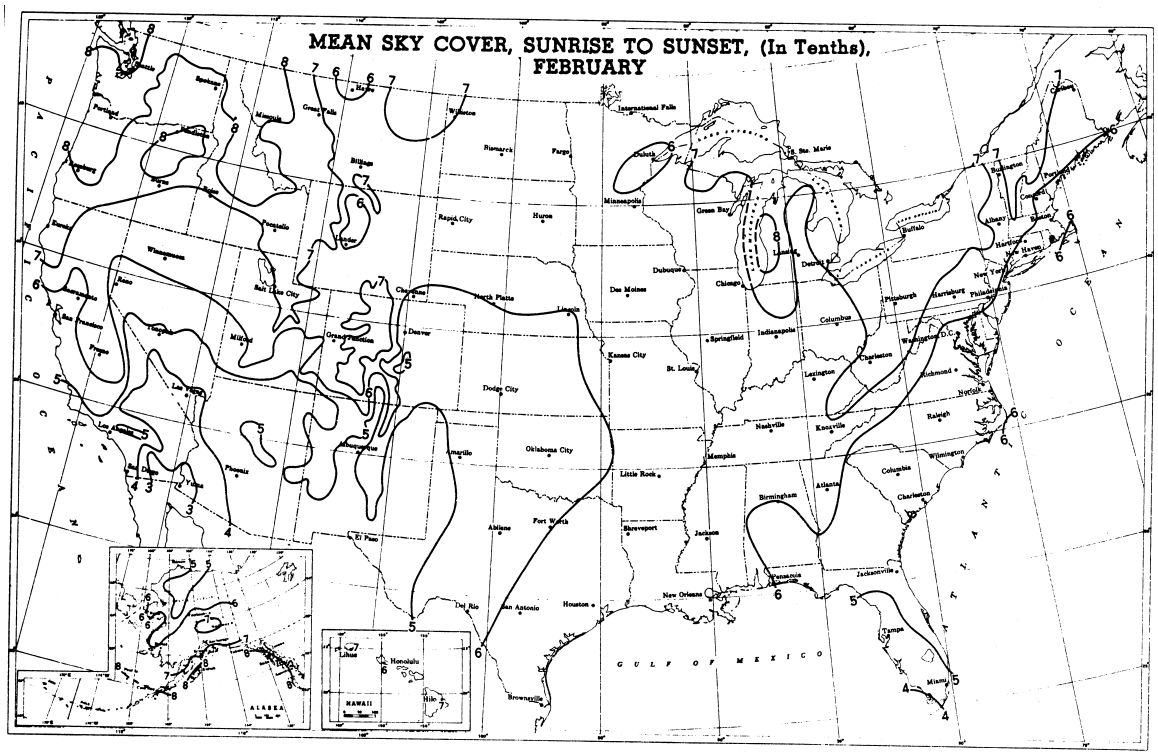

Figure 14. Values needed for the mean sky cover of the United States for February used in Complete_Climate.

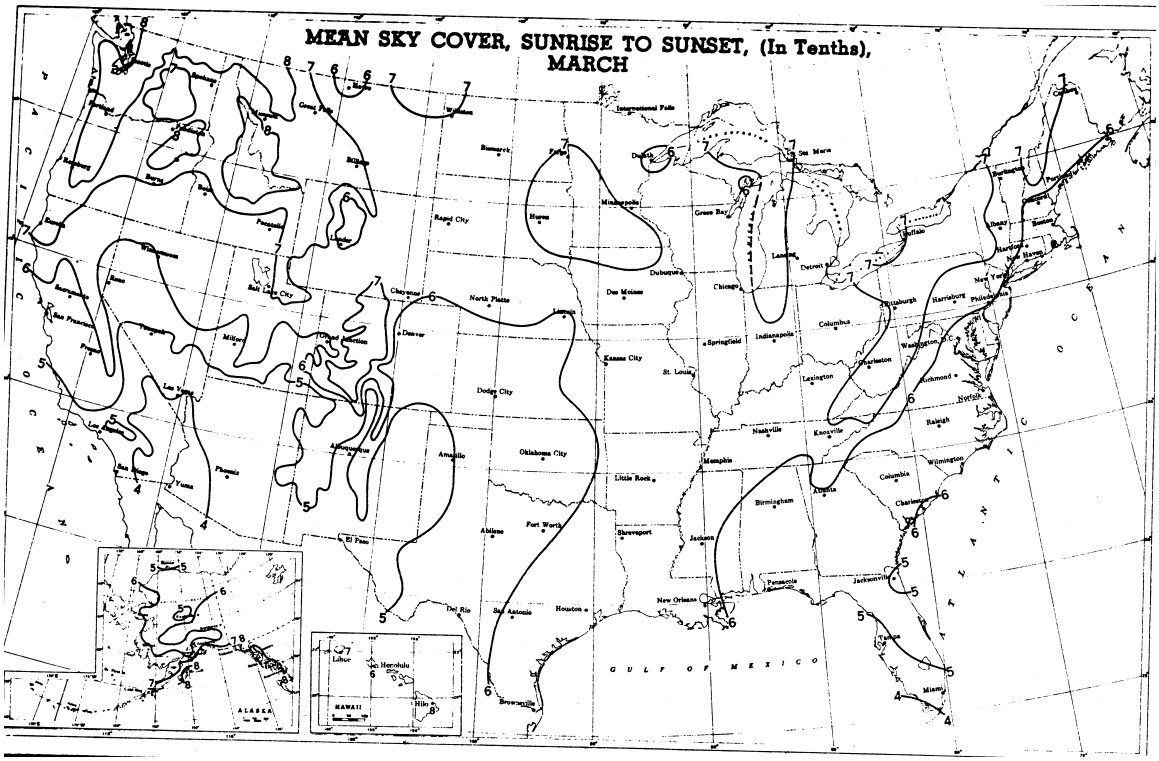

Figure 15. Values needed for the mean sky cover of the United States for March used in Complete_Climate.

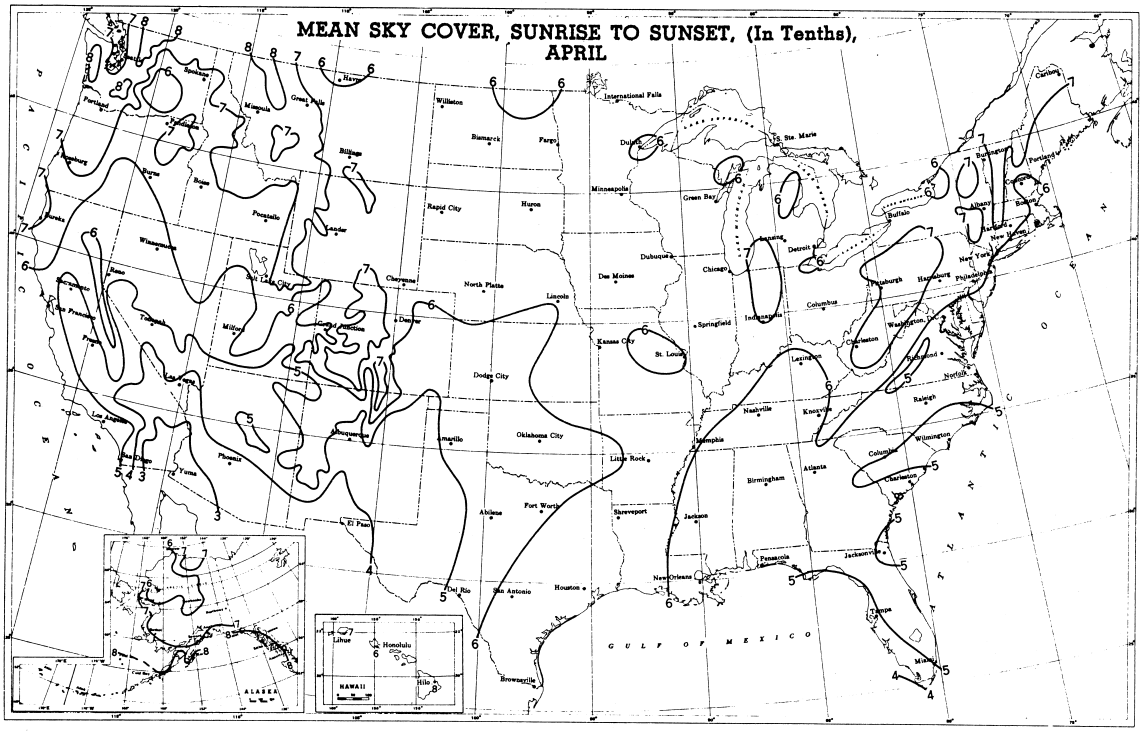

Figure 16. Values needed for the mean sky cover of the United States for April used in Complete_Climate.

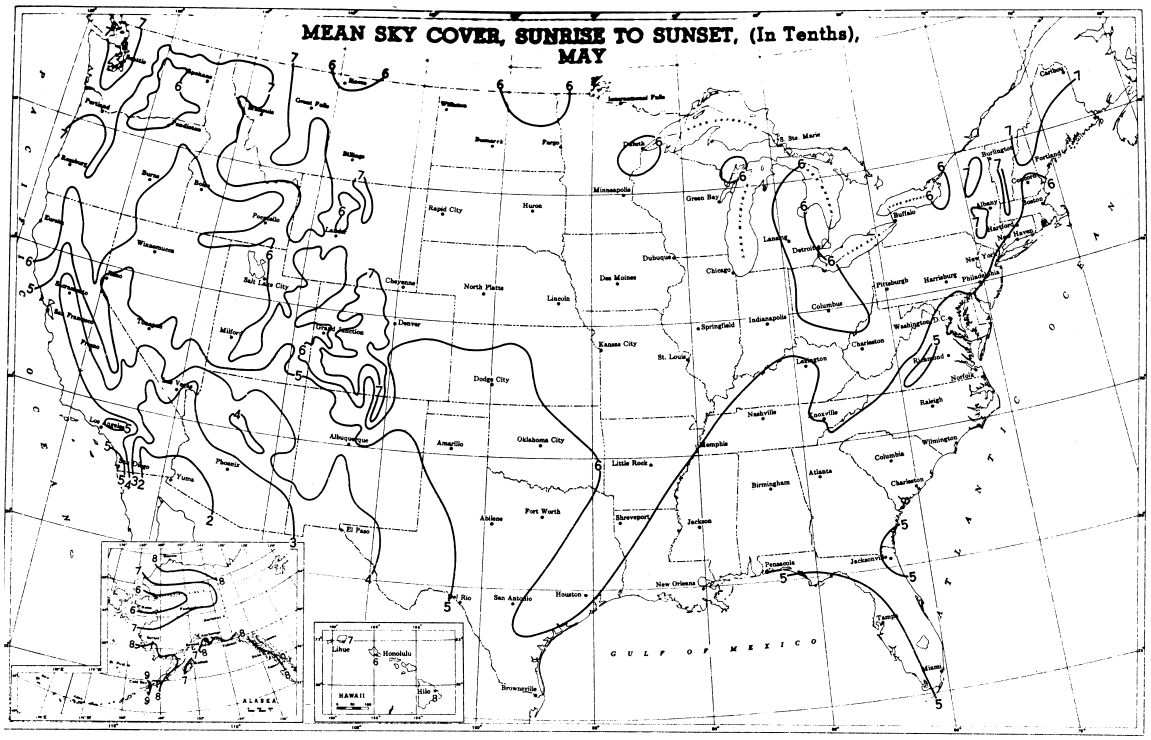

Figure 17. Values needed for the mean sky cover of the United States for May used in Complete_Climate.

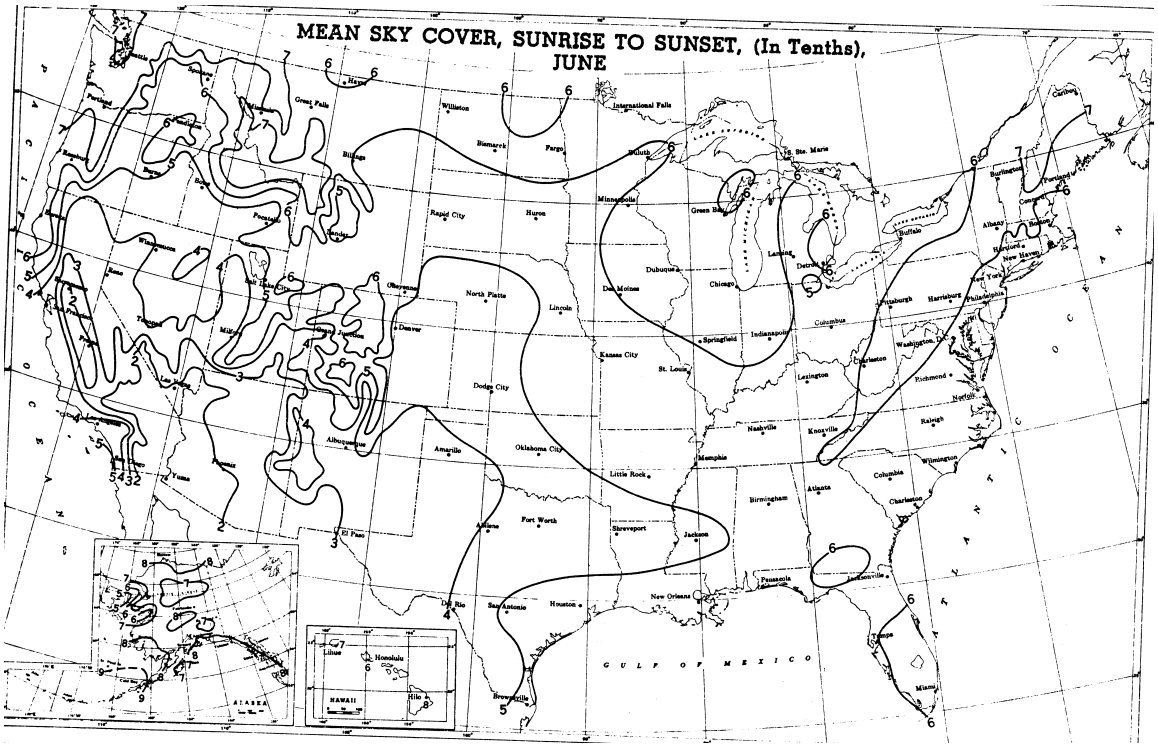

Figure 18. Values needed for the mean sky cover of the United States for June used in Complete_Climate.

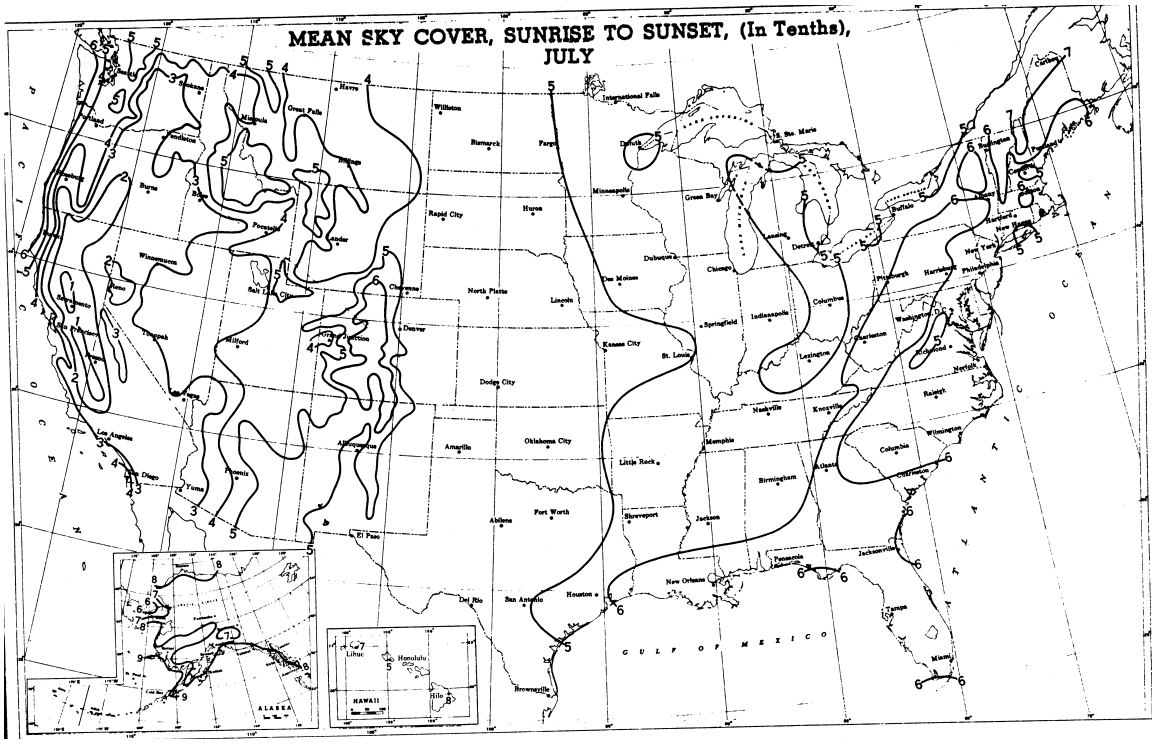

Figure 19. Values needed for the mean sky cover of the United States for July used in Complete_Climate.

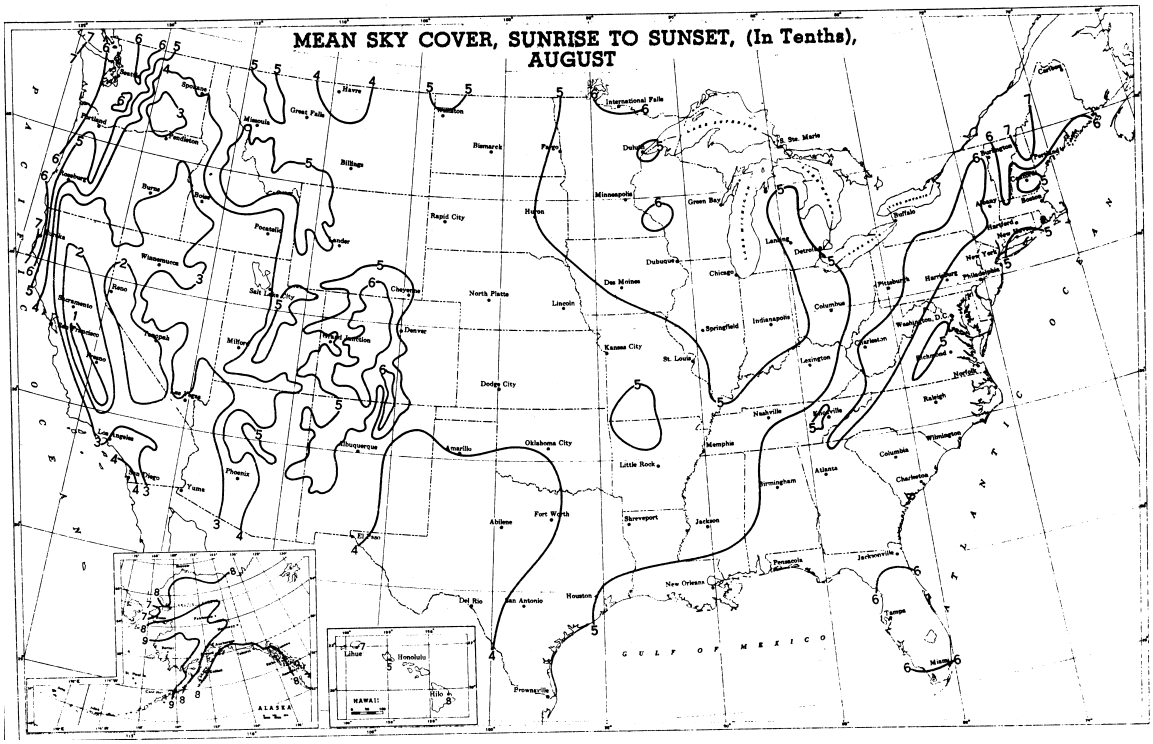

Figure 20. Values needed for the mean sky cover of the United States for August used in Complete_Climate.

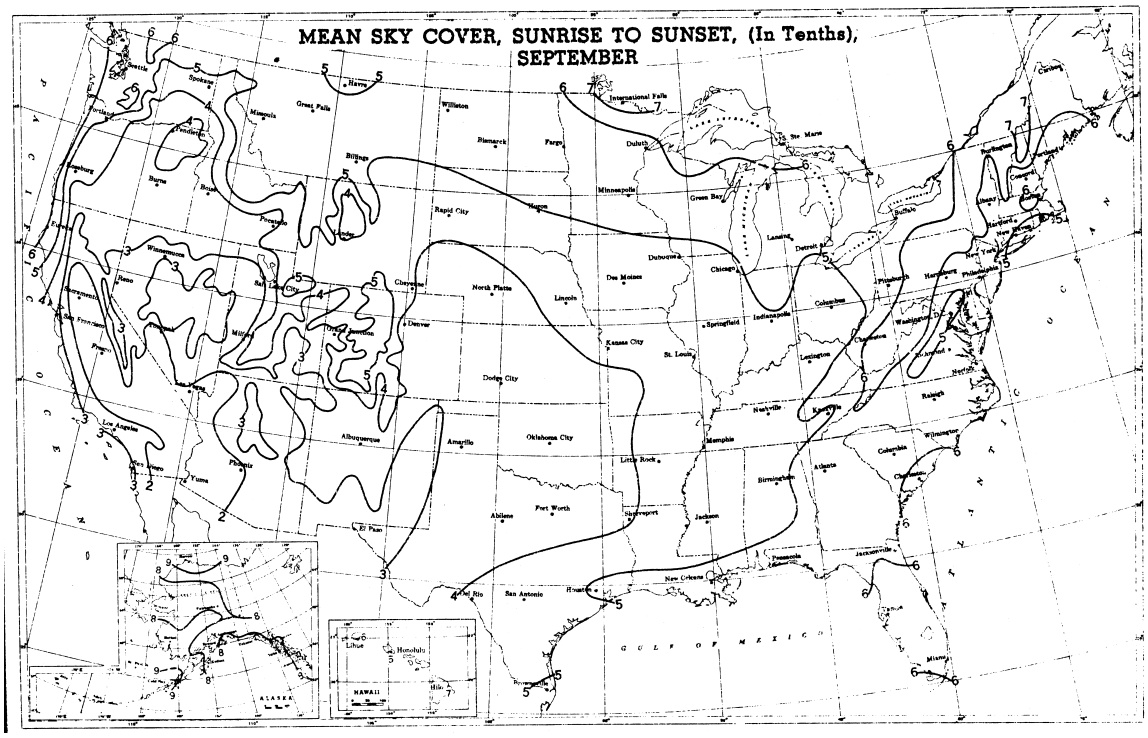

Figure 21. Values needed for the mean sky cover of the United States for September used in Complete_Climate.

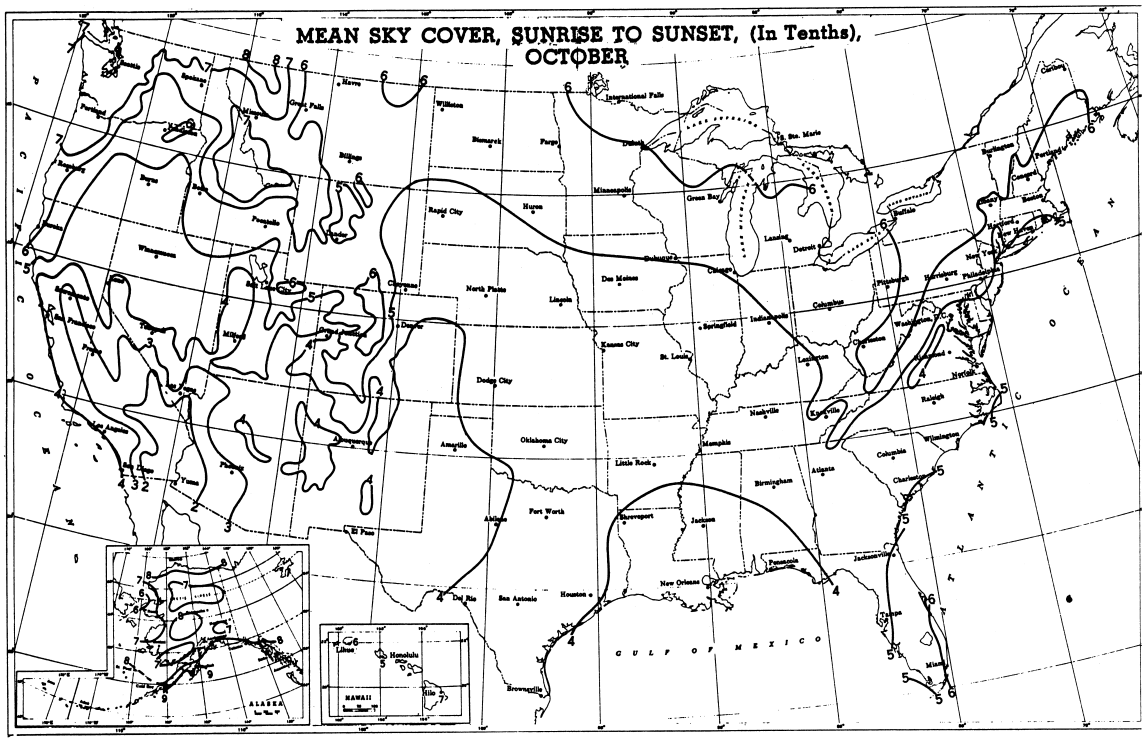

Figure 22. Values needed for the mean sky cover of the United States for October used in Complete_Climate.

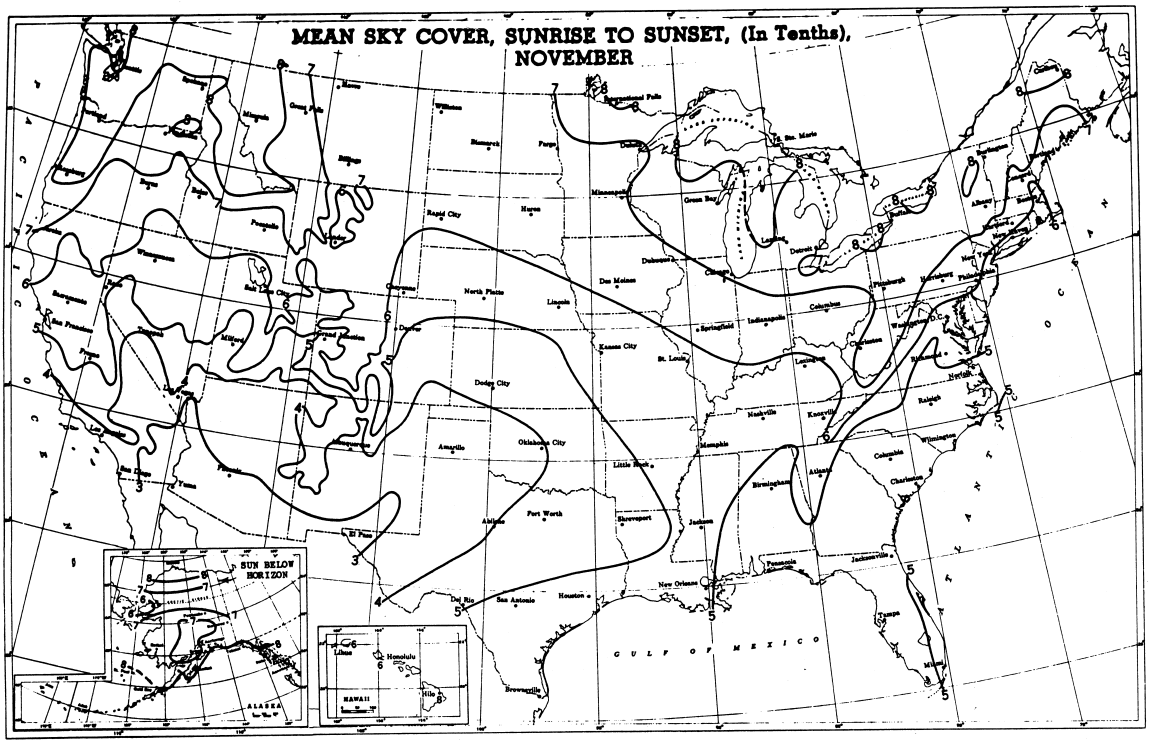

Figure 23. Values needed for the mean sky cover of the United States for November used in Complete_Climate.

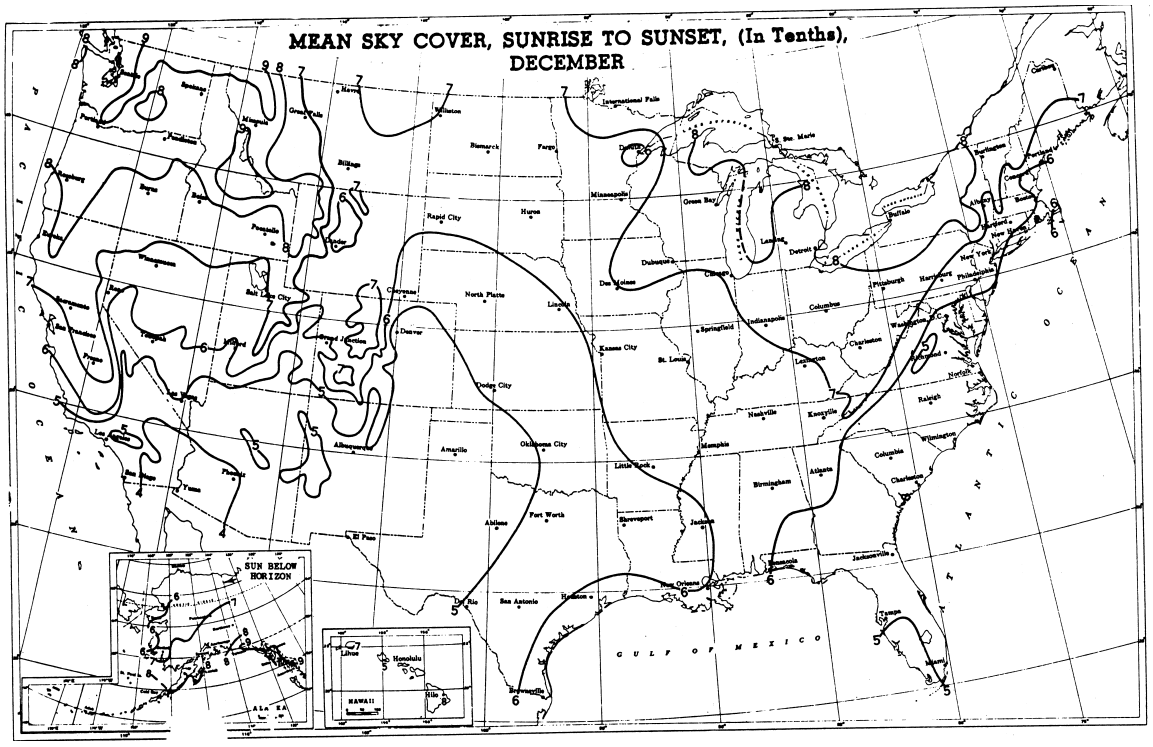

Figure 24. Values needed for the mean sky cover of the United States for December used in Complete_Climate.

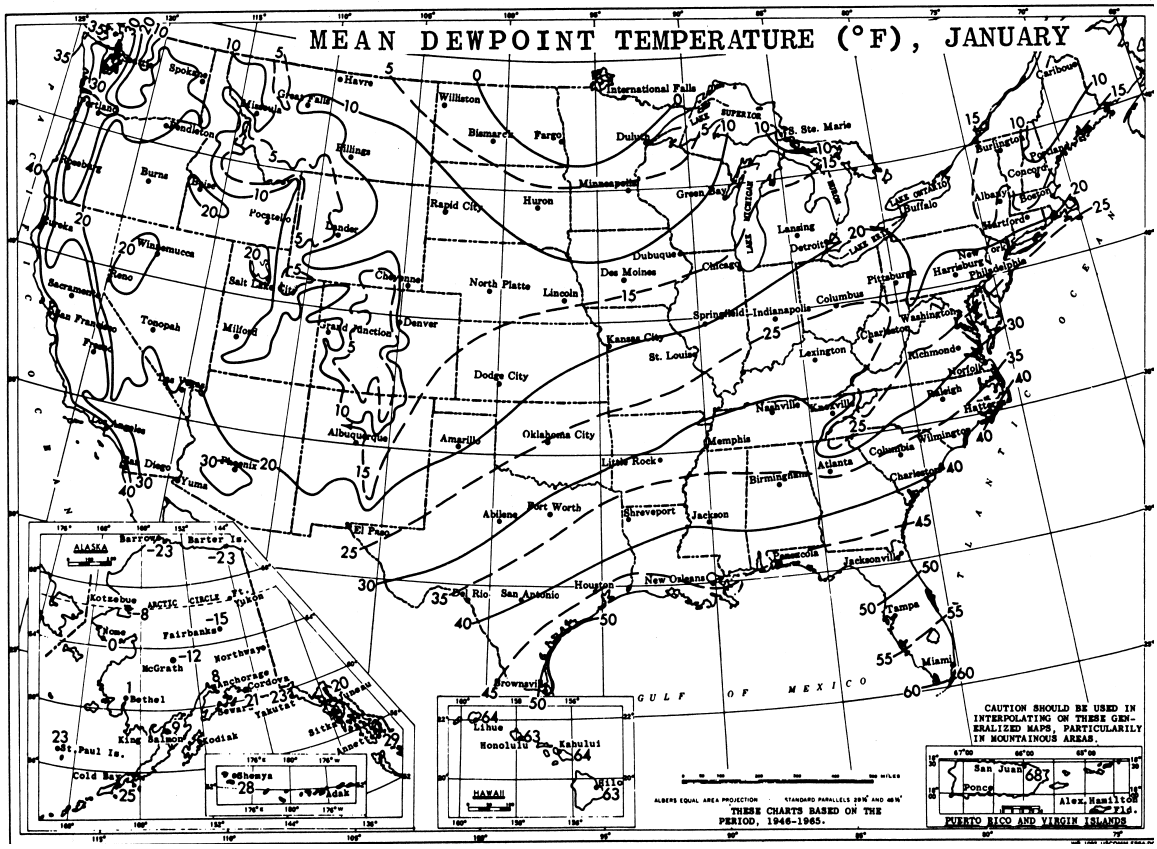

Figure 25. Values needed for the mean dewpoint temperature of the United States for January used in Complete_Climate.

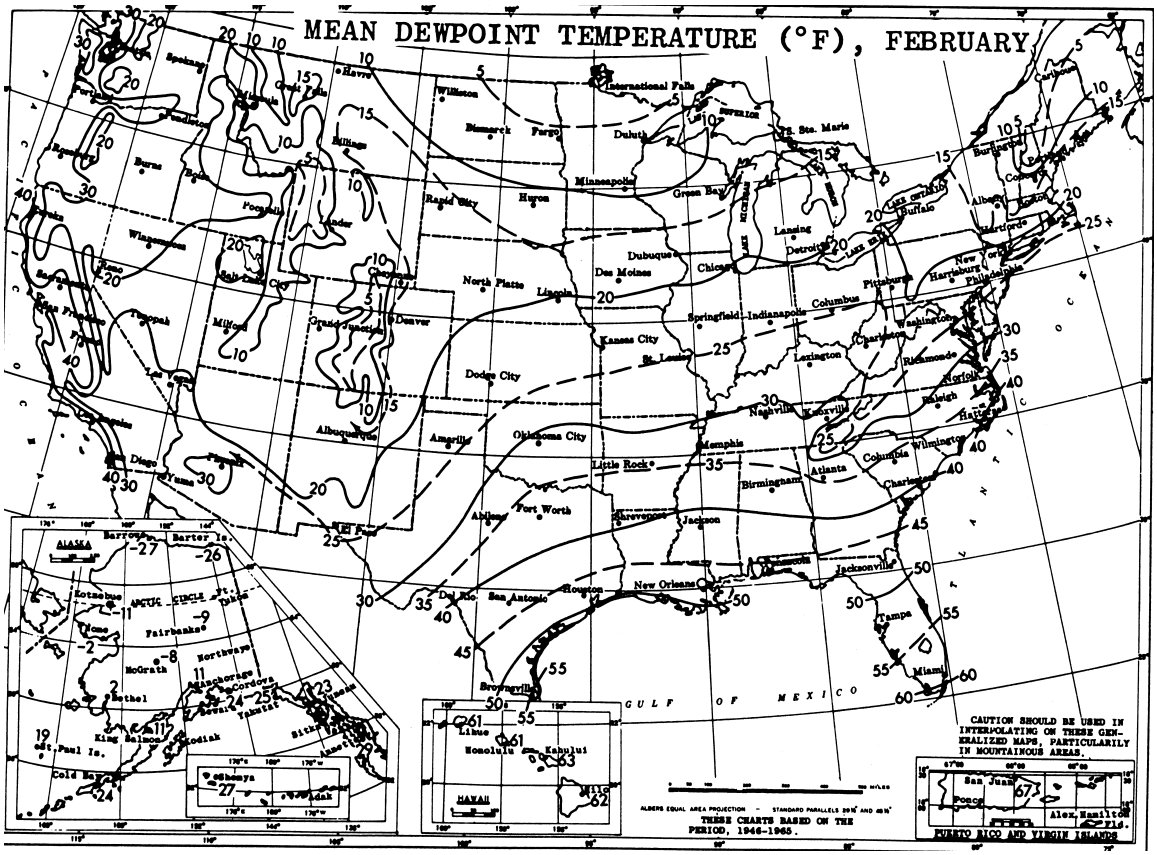

Figure 26. Values needed for the mean dewpoint temperature of the United States for February used in Complete_Climate.

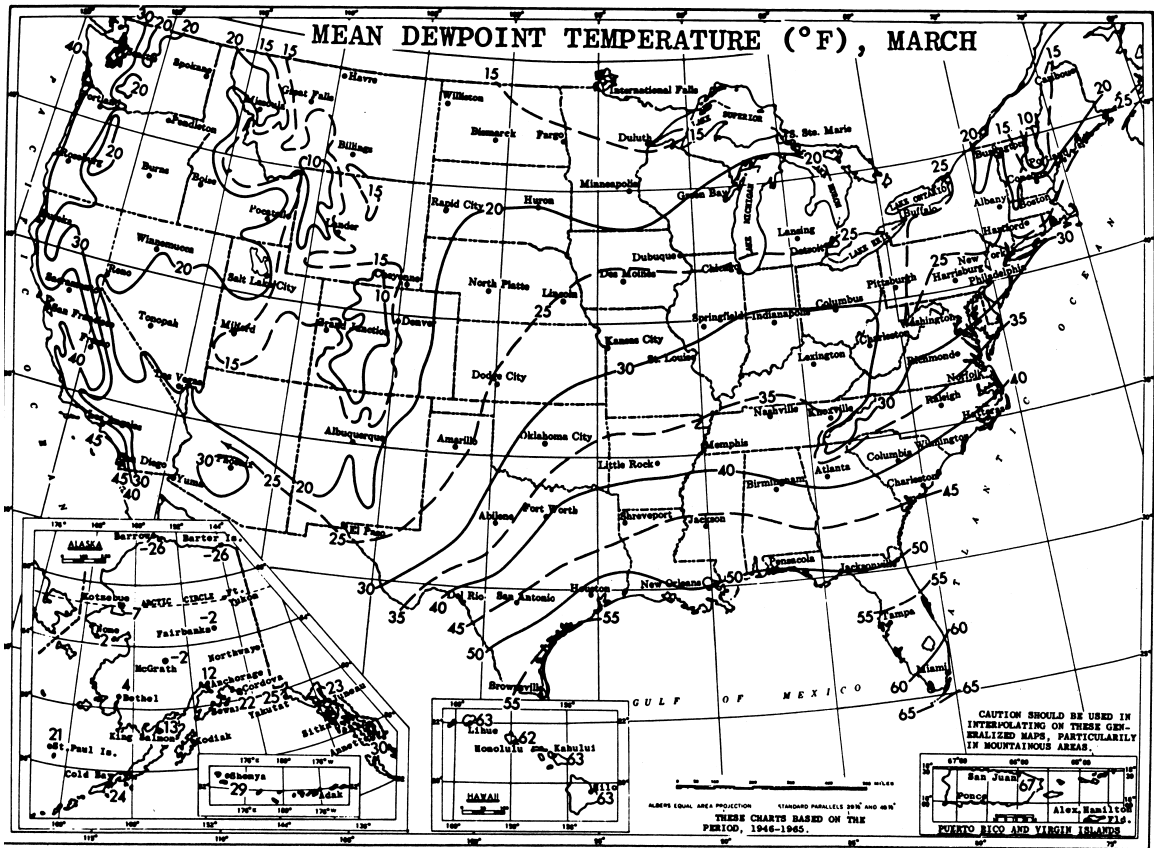

Figure 27. Values needed for the mean dewpoint temperature of the United States for March used in Complete_Climate.

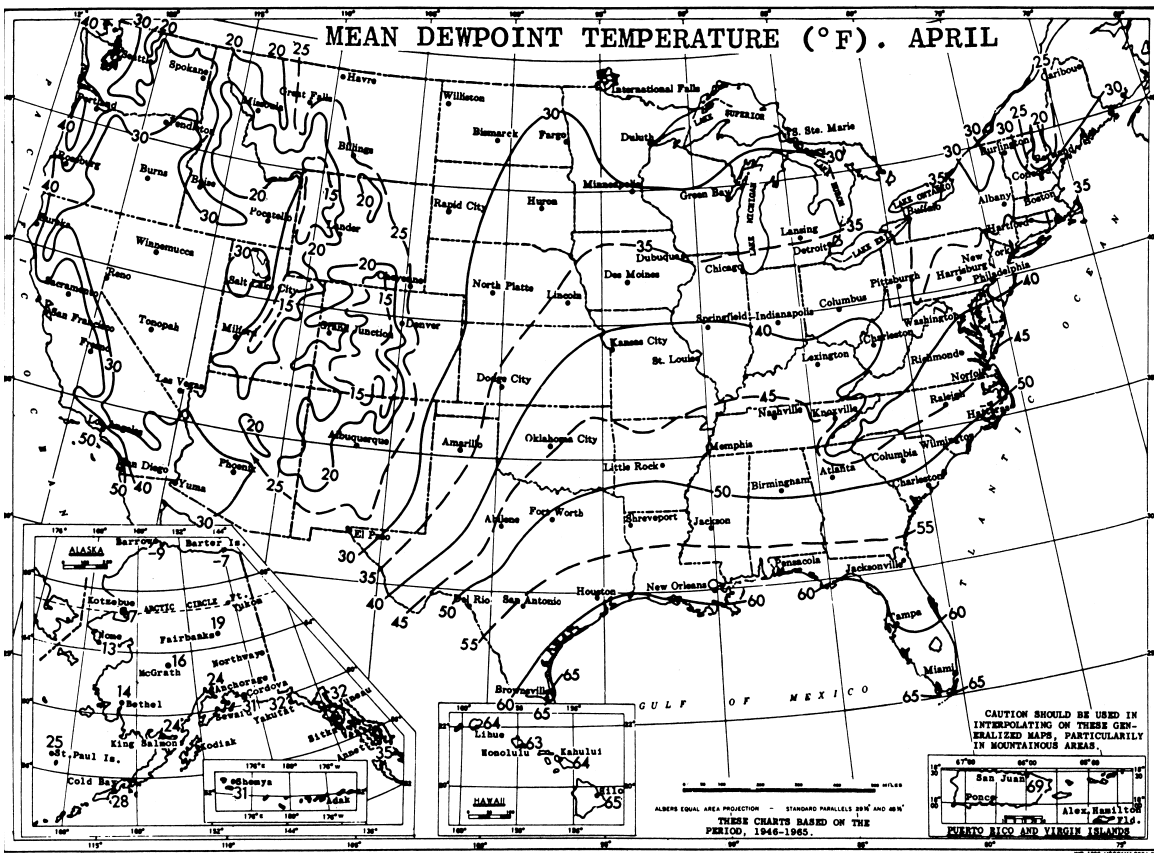

Figure 28. Values needed for the mean dewpoint temperature of the United States for April used in Complete_Climate.

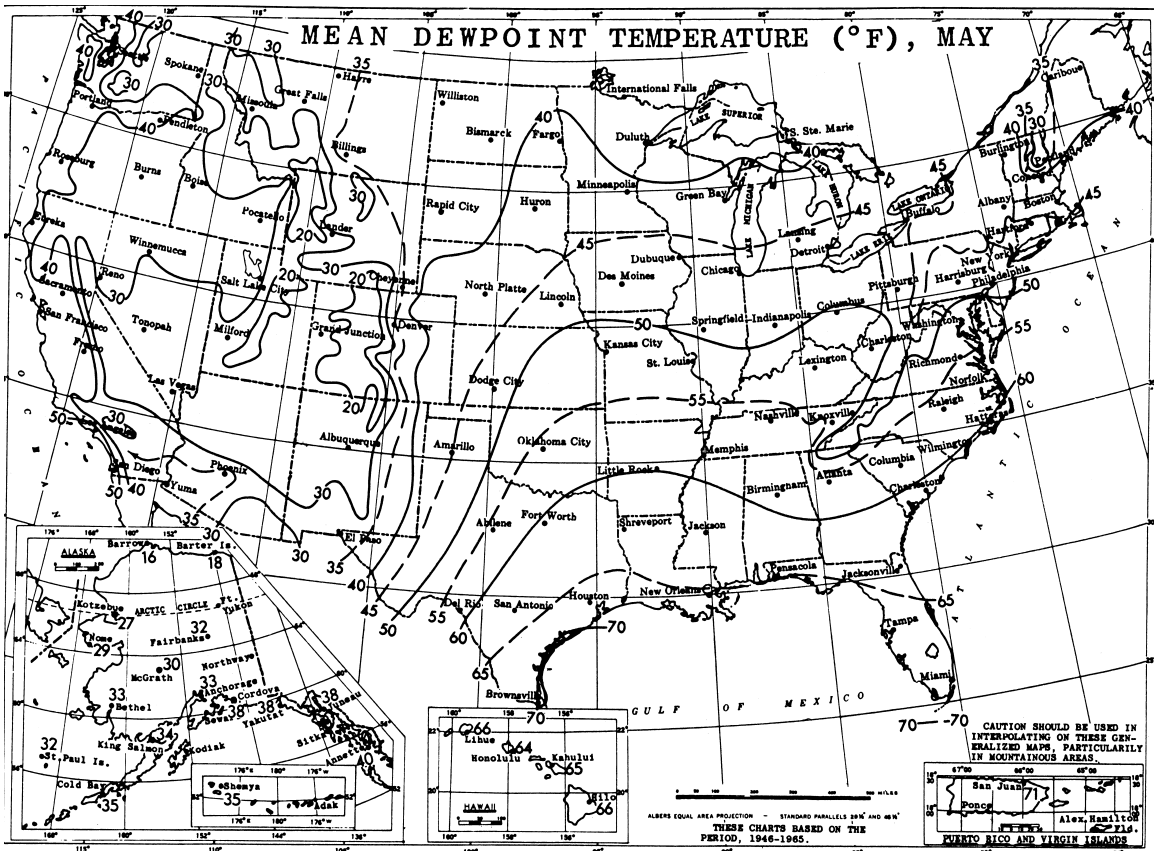

Figure 29. Values needed for the mean dewpoint temperature of the United States for May used in Complete_Climate.

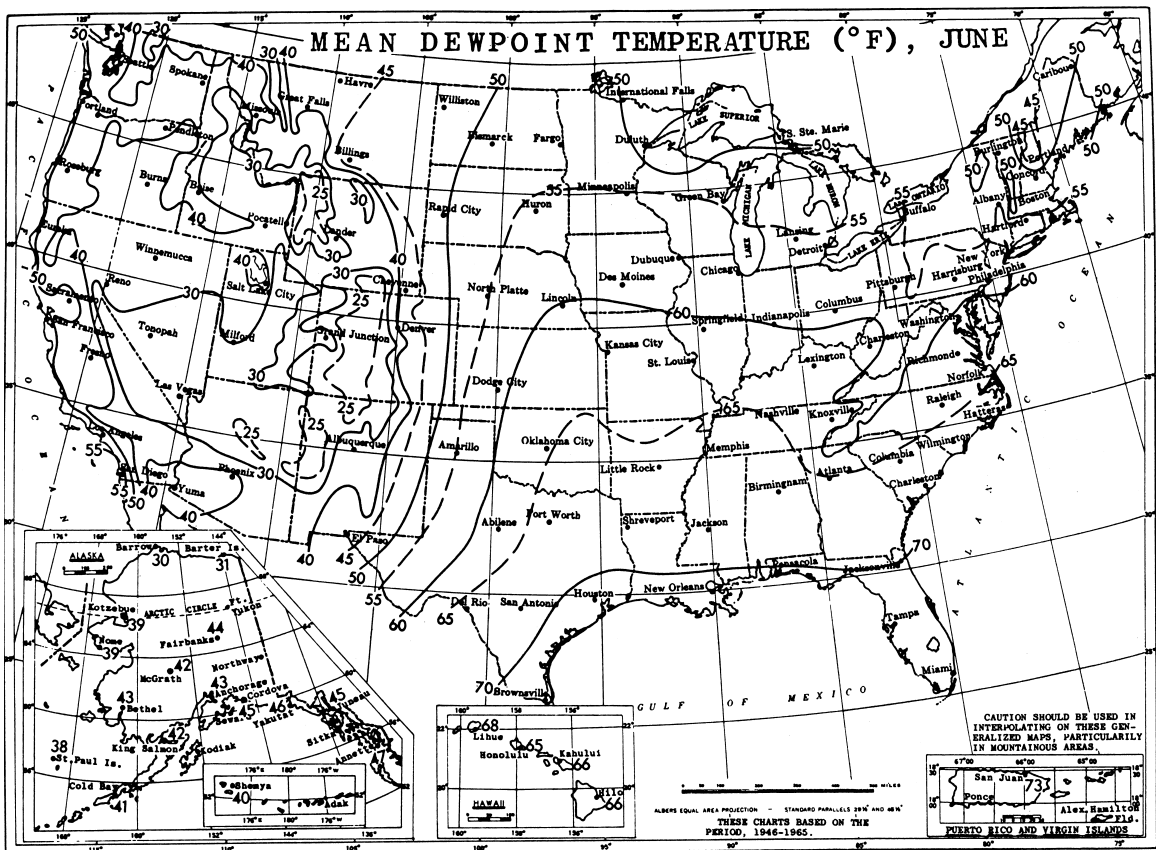

Figure 30. Values needed for the mean dewpoint temperature of the United States for June used in Complete_Climate.

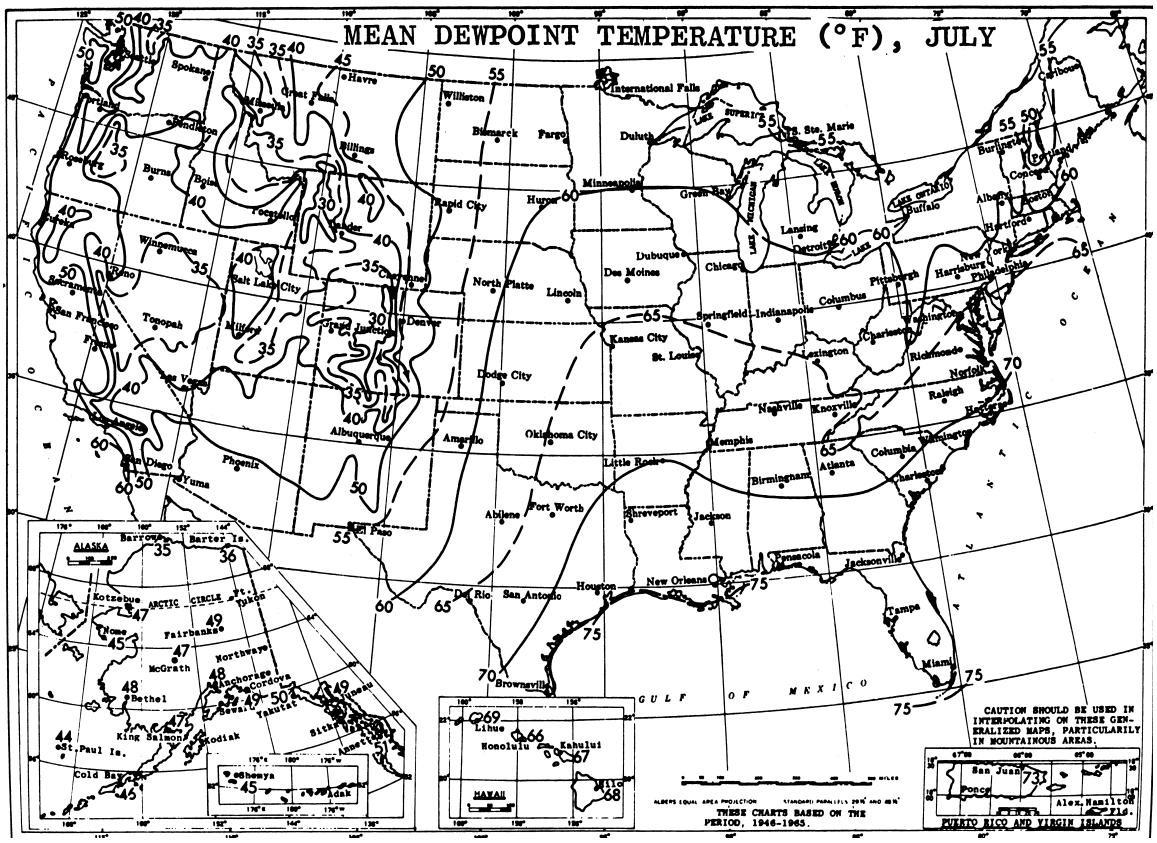

Figure 31. Values needed for the mean dewpoint temperature of the United States for July used in Complete_Climate.

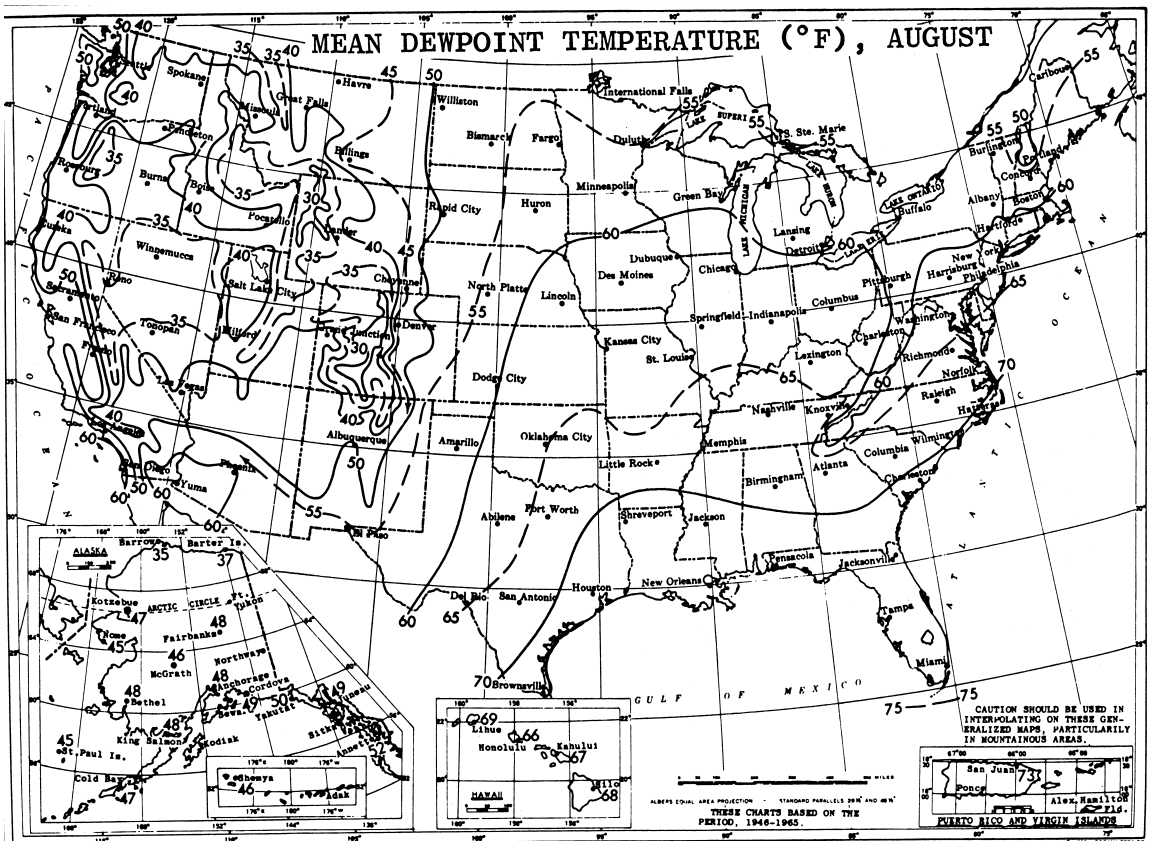

Figure 32. Values needed for the mean dewpoint temperature of the United States for August used in Complete_Climate.

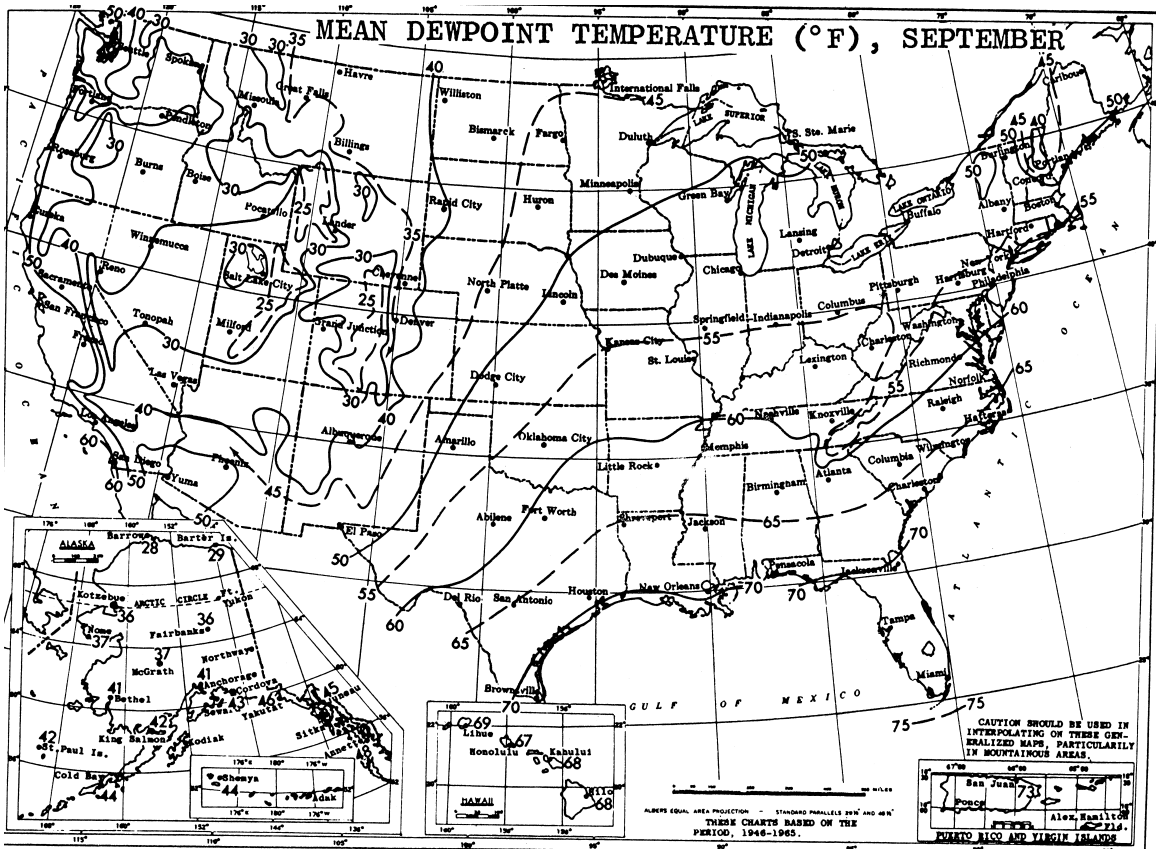

Figure 33. Values needed for the mean dewpoint temperature of the United States for September used in Complete_Climate.

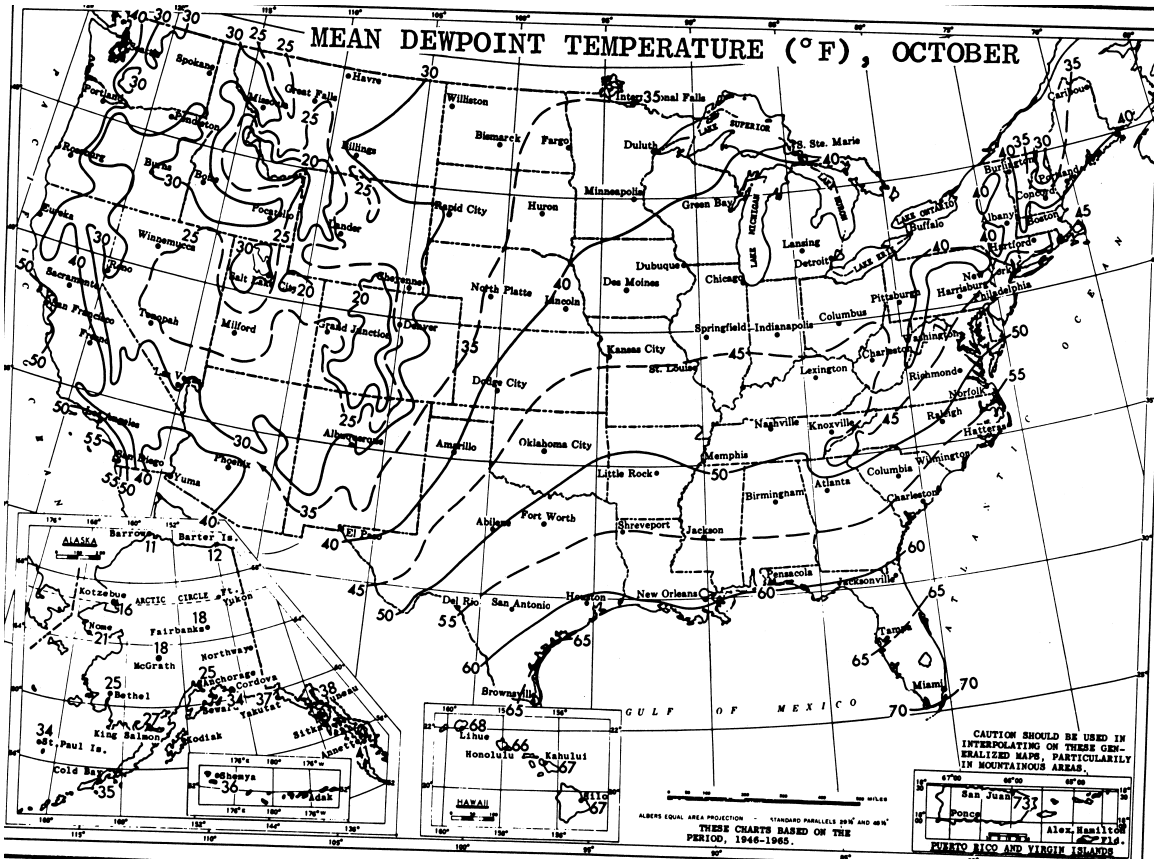

Figure 34. Values needed for the mean dewpoint temperature of the United States for October used in Complete_Climate.

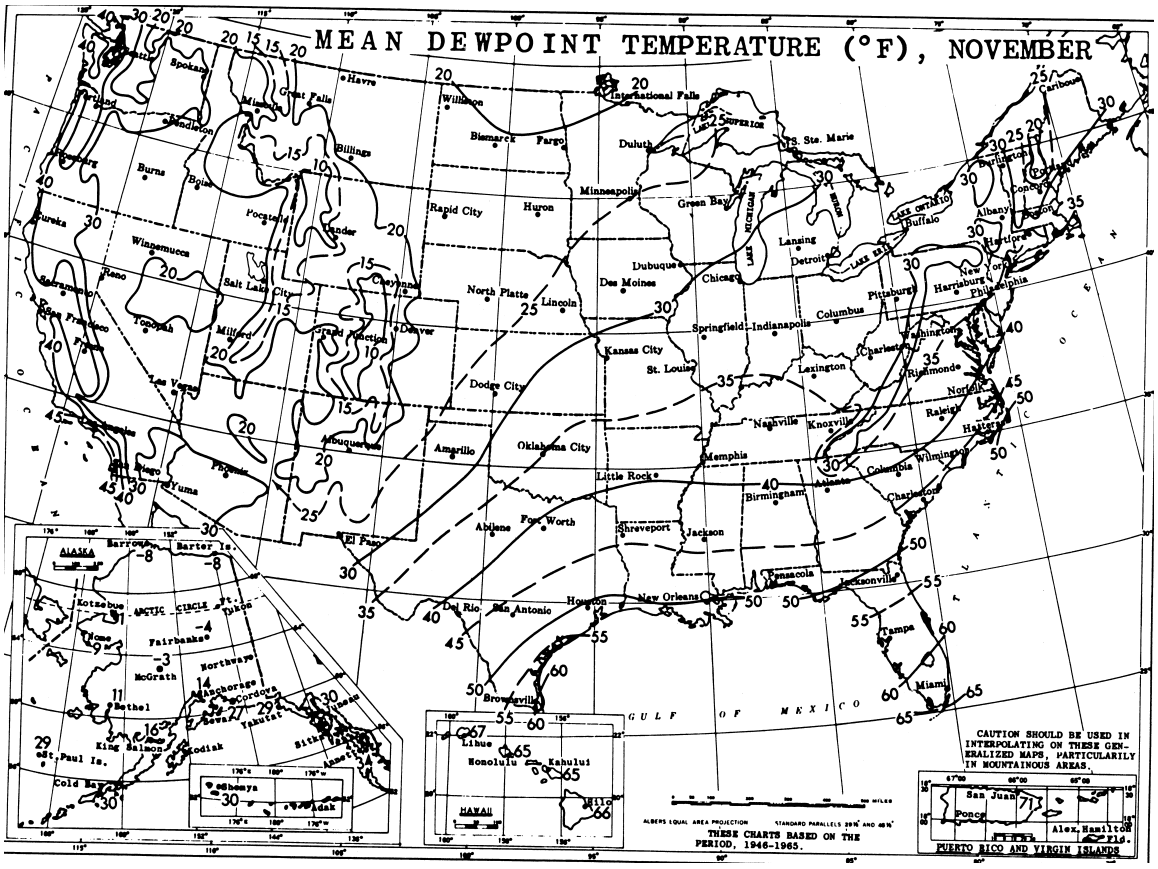

Figure 35. Values needed for the mean dewpoint temperature of the United States for November used in Complete_Climate.

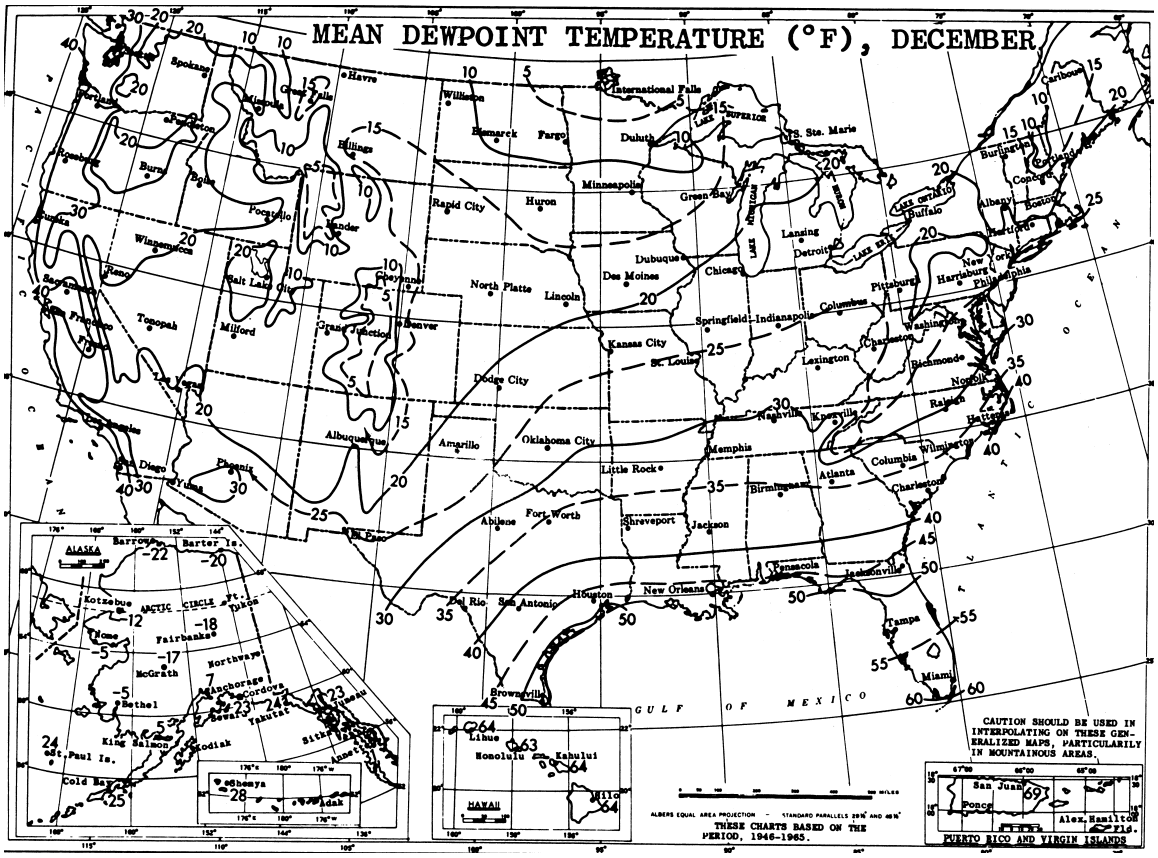

Figure 36. Values needed for the mean dewpoint temperature of the United States for December used in Complete_Climate.